

HOW TO WIN AT
VIDEO GAMES

Conquer
Q*bert
Top Strategy Inside

Joystick

T.M.



Judging
The Coin-Op
Beauty Pageant

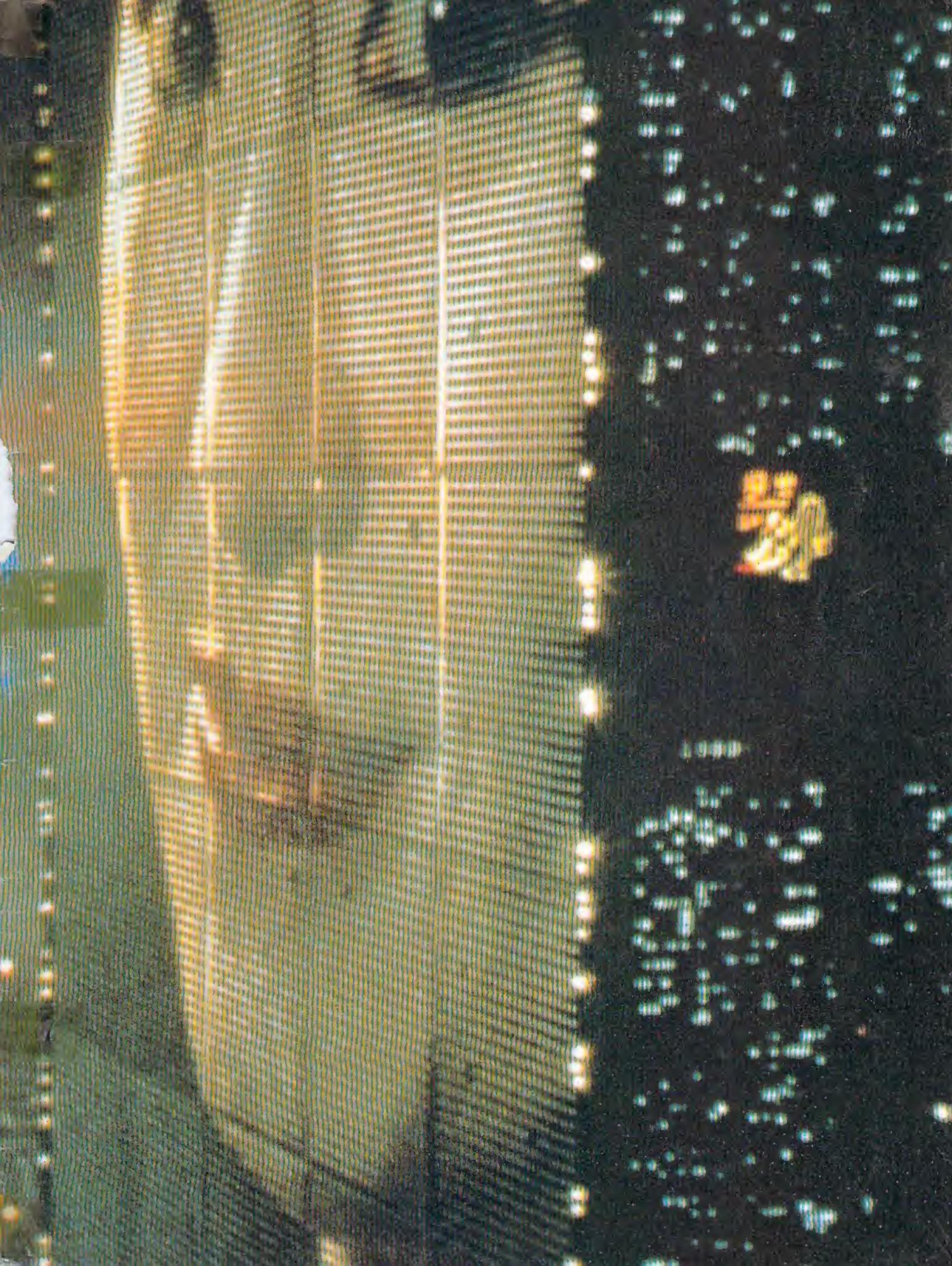
And The Winner Is... (see page 6)



GALAGA ★ PENGÖ ★ TEMPEST

THE THINGS THAT WE SEE
AND THE LIGHTS THEY REFLECT
EXIST IN OUR MINDS
AS ONE AND THE SAME.

YET A DIFFERENCE MUCH HARDER
STILL TO DETECT
IS WHETHER WE'RE PLAYING
OR PART OF THE GAME.



CONTENTS



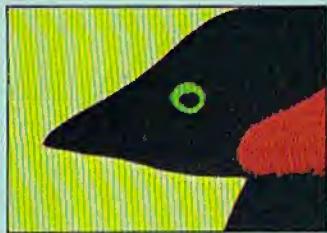
32



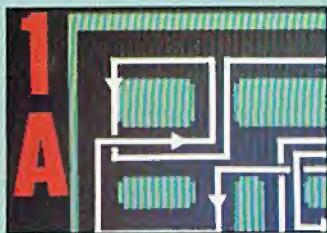
12



20



46



50



56

NEO

Q*BERT

Here's how to play the quee, qrazy, cube-hopping arcade game. By Doug Mahugh.

THE WINNING EDGE

TEMPEST

Electrifying top-level Tempest strategies by Eric Ginner.

INNERVIEW

"SILVER SUE" ENGLAND

Scott Phillips chats with the proprietor of Chicago's late-night hot spot for "serious players."

FEATURES

DOUBLE YOUR GALAGA FIREPOWER

David Small shows you how to use the Galaga doubleship for top scores.

WEST COAST GAME MANUFACTURERS

Who's who and what's what in the Wild West. By Doug Mahugh.

THE ARCADES OF SEATTLE

A tour of the Jet City's best game rooms.

STAR RAIDERS TRAINING MANUAL

Your mission: conquer the Krylons! Jim Gorzelany and Todd Rogers show you how.

THE GAME DESIGN GAMBLE

Despite creativity and technology, game design is still a crapshoot.

THE ARCTIC ANTICS OF PENGUIN

Steve Sanders' super sno-bee smashing strategies.

PAC-MAN: THE LAST WORD

The best of the best 9th-key patterns.

WHEN VIDEO GAMES ARE OUTLAWED, ONLY OUTLAWS WILL PLAY GAMES

Jim Gorzelany's satirical look at the video game "temperance movement."

DEPARTMENTS

LETTERS

FUTURE WAVES

AMOA Expo '82: the arcade beauty pageant. By Scott Phillips.

THE HOME FRONT

Jim Gorzelany rates the new game cartridges.

HOME VIDEO

Danny Goodman pits game systems vs. computers.

COMPUTER '83

David and Sandy Small look at computer network space games.

CARTOON

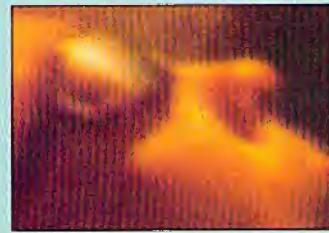
TECHNOCRACY

JOYSTICK CHARTS

32



38



12



24



26



42



60

WORLD WAR VIDEO

Please convey my appreciation to Issac Asimov for the surge of exhilaration I experienced as I read the "Dividing the Risk" segment of his "Video Games to Come" piece in your November issue. Video world gaming could be the most rapidly evolving technocultural phenomena to douse in time the auto-destruct fuse that will holocaust the eco-sphere inexorably when zero-sum nuclear world war gaming burns down to a launch-on-warning-zero-response-time grand finale that is certain to be reached within this decade. Imagine, millions blowing up the world every day, with human survivors winning UN speeches, celebrity-laden diplomatic junkets, etc! Or, play out how to do the most good for people with total humanity's up-to-the-minute record of what's available and how to use it. Winner gets to pretend Presidency until another scores higher on the accelerating ephemeralization scale.

Imagine the potential for electronic inter-activism that vid gaming could thusly incorporate into the culture without losing its powerful attraction of escapist fascination.

Spinstar Gynandros
Holoram
San Francisco, CA

Right you are, Spinstar!

DIFFICULTY MADE EASY

I think it would be a good idea if you included the difficulty settings of any game you review. This would specifically include a discussion of the difficulty setting and its effects on the game. Does a higher difficulty setting change the number of enemies, their speed, their intelligence? Does it speed up everything, or just the enemy? Does it slow you up or make your controls sluggish?

Paul Santa-Maria
Monroe, Michigan

Our strategies are usually based on the most prevalent difficulty setting for each game. Space limitations prevent us from providing individual strategies for all difficulty settings. However, check the "Technocracy" column in this and future JoyStik issues for in-depth information regarding settings for specific games.



Robot arm adjustment screen



Video games to come

[BUY ARCADE GAMES?](#)

Being an avid fan of Defender, can you please find out for me whether or not the average citizen can either rent or buy one of the arcade games, and for how much?

Ken Takaki
Chicago, Illinois

Ken, we have good news and bad news for you. First the good news—you can indeed purchase your very own arcade games for home use. The bad news is that it will cost you mega-quarters to do so. New machines can run as high as \$4,000 and up; used games, of course, can be had for much less. What's more, you cannot buy these machines directly from their manufacturers; you must purchase them through video game distributors. Check your local yellow pages under "Amusement Devices" for the names and numbers of such distributors in your area. If there are none listed, scout around for a copy of Play Meter, the trade magazine of the coin-op entertainment industry (you might be able to beg a copy from your local arcade owner). This subscription-only journal is packed with ads from new and used-game distributors across the country. Finally, a word of warning: many of these distributors deal only with amusement operators and do not sell to the general public.



Split-screen Pac-Man

SPLIT-SCREEN BEATEN!

SEATEN.
I read in your last issue about the Pac-Man "split-screen phenomenon," where the right side of the screen is filled with computer language that hides the dots and distorts the maze, occurring on the 256th board, or 244th key. I have made it to the 647th board, or 635th key. My secret? I have found that if at the end of the 243rd key, your score has the number 256 located in it, the game skips over the 244th key and goes on to the 245th key. From here the game continues normally.

Chris "CCC" Crabtree
Union City, Tennessee

Thanks for the tip, Chris—we've tried it and it works. So far, yours is the best strategy we've seen to get past the split-screen. While it is theoretically possible to blindly maneuver your way through the computer language on the right side of the 256th board (with a guide dog, perhaps), we still haven't found a top-notch player who can do it. Any takers?

ATARI CART INFO

I would like to see some articles rating the various Atari 2600 cartridges and perhaps listings of manufacturers who make better controllers. Will my cartridges work on the new Atari 5200?

Ed Shiff
Tarzana, California

I am excited that one of the games for the Atari 5200 will be Star Raiders. Will the version for the 5200 be identical to the Atari 400/800 computer version with nothing left out?

Maj. Hobart S. Cable II
Dayton, Ohio

Yes, yes, and again yes. First, you'll note that this month JoyStik features a new column, "The Home Front," which will regularly review the newest in home video games and accessories, including cartridges for the Atari 2600 and 5200. Second, by springtime Atari will be marketing a 2600 cartridge adaptor for the 5200 system, similar to ColecoVision's much-heralded "Expansion Module." Before you ask—no, the games won't look or play any better than they do on the 2600, but you will get to play them with the far-superior 5200 controllers. Finally, Star Raiders will indeed be a duplicate of the famous 400/800 computer game. This is because the 5200 system is, in effect, a small computer that is every byte as powerful as the standard factory-equipped Atari 400.

NO "WALL-TO-WALL" ZAXXON

On page 39 of your November issue you mention "Zaxxon 3-D wallpaper." I was wondering how to get it, how to order it or what. I could use eight or nine square yards.

Mike Zilner
Indiana, Pennsylvania

Sorry Mike, for the time being your walls will have to settle for plain old latex flat enamel. In the article you mentioned, we referred to the visual effect of the Zaxxon game as "3-D wallpapering." This means that, while the background may appear to be 3-dimensional, it is merely decoration—the player cannot interact with it.



3-D Wallpaper?

VID WOMEN UNITE!

I'd like to request a feature on women champs for a change. Most arcades post high scores for men and women. Some may think this is sexist (nah-h-h), but I think it's quite fair; there are already divisions in sports like swimming, and tennis. I'm up to 217,000 on Pac-Man, and 142,000 (level four) on Tron (pretty awesome for a "chick," huh?). Incidentally, I am 25, and into ELEKTRONIX all the way. I should go back to school and finish my degree (thanks to "RAY-GUN," I can't afford college; no more CETA), then I could design robots, new video games and all kinds of stuff. Sigh...megabucks! Anyway, how 'bout giving the ladies a little recognition in the world of video? Some of us happen to be ACES!

Melanie Jean Mayfield
(Robot-in-Residence)
Eureka, California

Check the JoyStik charts at the back of this issue to learn the favorite games and high scores of some top women video game players.

VIDEO TOURNAMENTS

Do you happen to know when the next Donkey Kong championship will be held? I have gotten scores over 300,000 and would like to enter the next contest.

Adam Ivey
Texas City, Texas

I am very anxious to be notified when there will be another Tron contest, especially in the New York area.

Michael Bernard
Brooklyn, New York

In the next issue of JoyStik, we'll report on both arcade and home video game contests and tournaments on a local and national scale. We intend to report on them on an ongoing basis thereafter. If any of you out there are organizing such contests, please let us know about them. Please note that because of our deadlines, we need information on these tournaments at least two months before they are held. Likewise, please advise us of the results after the contest is over and the winners are crowned.

REACT

Your reaction to JoyStik is vital—be it hate mail or strategy, comment or exposition. Let us know what you think. Send letters to:
The Editors
JoyStik
3841 West Oakton Street
Skokie, Illinois
60076

FUTURE WAVES AMOA EXPO '82:

The Amusement and Music Operators Association (AMOA) show is different from most trade shows. While many so-called "conventions" are just carnivals for overdressed hawkers and barkers to

peddle their wares, the AMOA is a beauty pageant of the world's newest arcade video games.

This year's show was worthy of the best of Bert Parks and Atlantic City. The

stage was set for November 18-20 at Chicago's fashionable Hyatt Regency. Over 160 exhibitors attended, each offering one or more hopeful contestants to be judged on their beauty, talent, and imagination.

But, like all beauty pageants, the winners are few. For some, success at the AMOA show was based on the number of orders filled, but what follows here is our evaluation of this year's contestants from a player's point of view—the winners as well as a few very imaginative and very unusual hopefuls.

1982 AMOA MISS VIDEO **BUCK ROGERS: PLANET OF ZOOM SEGA ELECTRONICS**

As is true with all beauty pageants, there can be only one winner. And the winner of this pageant is Buck Rogers: Planet of Zoom. Indications of this game's impending success appeared early in the show, when spectators stood four-deep waiting to play one of more than a dozen "Bucks" at the Sega Exhibit.

The most impressive aspect of this game is the realistic sensation of flight that it creates. Your point of view is from behind and slightly above your ship. You see—and feel—every climb and every banking turn your ship performs. The Zaxxon-style joystick allows very comfortable and very accurate maneuvering. And the speed control buttons allow you to change your flight speed at any time.

The graphics are impressive in both color and complexity. The playing field is comprised of four different settings in which eight different battles are fought.



Also present were more than 10,000 judges, mostly game distributors and arcade owners. Milling about the flashing exhibits, each had his or her own criteria for determining a "winner." Some simply stood before a contestant, studying its color and composition with practiced eyes. More inquisitive judges would gently push a button or wiggle a joystick and wait for the contestant's response. And still others would judge each entrant in an active way, pouncing on the controls and playing each screen for all its worth.

THE ARCADE BEAUTY PAGEANT

by Scott Phillips

You have a time limit to get through each screen. And bonus points are awarded for destroying all of the enemies quickly.

Three of the battle locations are near the surface of the planet. There you maneuver your ship through narrow channels and around "towering spires," while under attack from alien fighters, air torpedoes, and hopping land rovers. The fourth battle location is above the planet in deep space. Here, you will encounter a wide variety of alien ships, asteroids, and floating mines.

Your goal is to reach the eighth battle, where you must conquer the "Enemy Source Ship." This spectacular display literally fills the screen as you attempt to destroy the ship's four engines, plus the fighters it launches. Destroying this ship earns you extra play.

The audio portion of Buck Rogers is another winning feature. The sound of a collision with one of the "towering spires" is realistic enough to make your head hurt.

The imaginative combination of strong graphics, good game play, and imaginative sound effects makes Buck Rogers: Planet of Zoom the rightful winner of this pageant.

1ST RUNNER-UP POLE POSITION

ATARI

The number two contestant in the AMOA beauty pageant, Pole Position, literally blows the doors off any driving game you've ever experienced. If you like Turbo, you'll love Pole Position. It successfully straddles the line between video game and driving simulator.

The setting for this game is the Fuji Speedway—a winding Gran Prix track nestled among the foothills of picturesque Mount Fuji. Your car is a Formula 1 racer with all the necessary controls: racing-style steering wheel, two-speed shift, accelerator pedal, and foot brake (sit-down model only).

Like any race, you must first run a qualifying lap—in less than 73 game seconds (about 30 actual seconds). You are then awarded a starting position in a race of eight cars, depending on your qualifying time. The race begins with the green light. You must start in low gear and shift accordingly. Your goal is to pass all of the other cars and finish the lap in the fastest possible time.

Racing conditions are very realistic. You can slide through corners, wipe out on oil slicks, and even pass on the shoulder. Atari has included "Atari," "Dig-Dug," and "Centipede" billboards on the sides of the track as a way of "blowing their own horn." Striking one of these signs or another car results in a fiery crash that robs you

of precious time. If you can finish the race lap with time to spare, you'll earn the chance to compete in another race (up to four times).





2ND RUNNER-UP

Q*BERT

D. GOTTLIEB & CO.

One of the most imaginative "cutesy" games competing in this year's pageant is Q*Bert. In addition to imaginative game play, Q*Bert also features exceptional color and animation—a television cartoon that you control.

There are nine different screens to this game, each consisting of a pyramid of cubes (Qubes). The object is to guide Q*Bert onto each cube, changing them all to the same color. A simple joystick controls his movements. And naturally, there are adversaries on the pyramid that make Q*Bert's

job more difficult. Some of them change the cubes back to their original colors, while others try to attack Q*Bert. There is also a "magic ball" that Q*Bert can use to temporarily "freeze" his adversaries, and flying discs that carry him to the top of the pyramid.

But by far the most appealing feature of Q*Bert is the audio feature that allows Q*Bert to speak. The game has four different voice inflections and 64 different phonemes (partial word sounds). At different times you will hear a random set of phonemes in a given voice inflection. There's no predicting what Q*Bert might say.

3RD RUNNER-UP

MILLIPEDE

ATARI

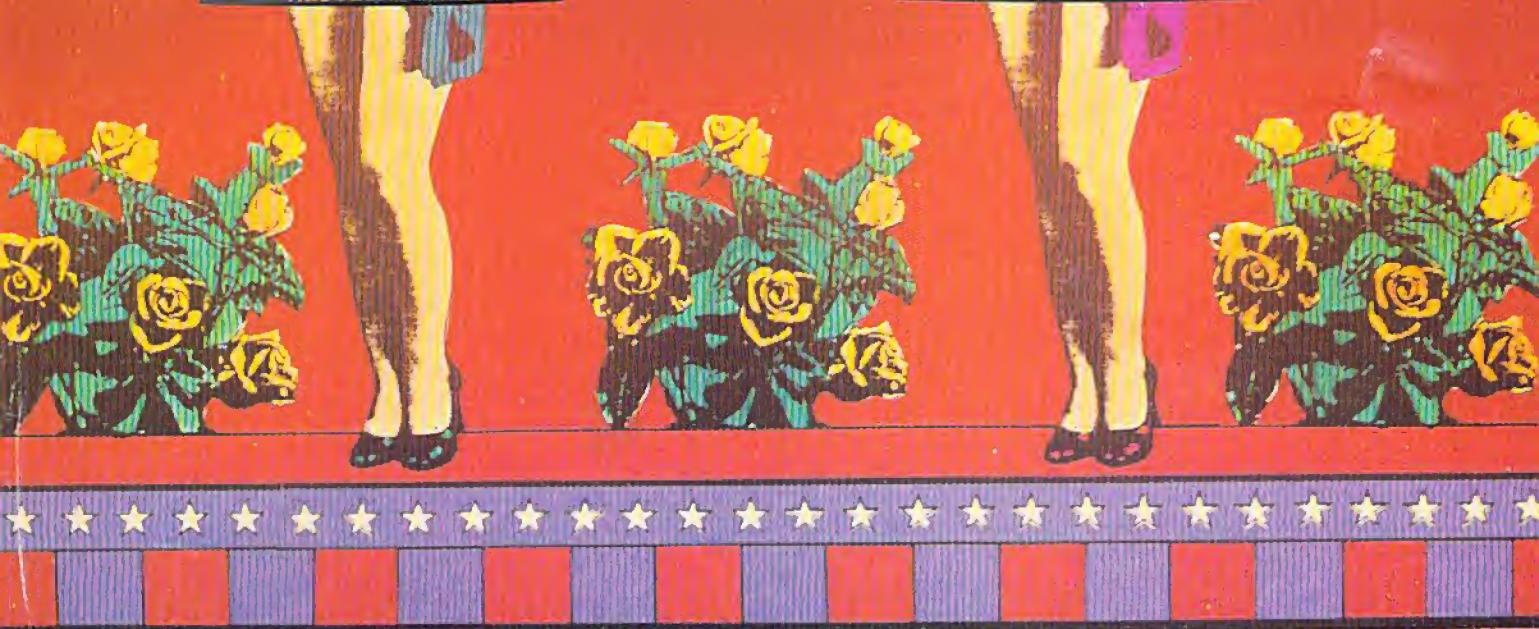
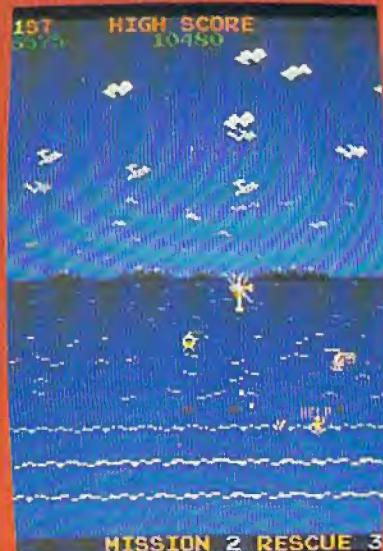
The third runner-up in the pageant, Millipede, is different from many so-called "sequel games" in that it clearly has been *improved* and not just altered. Whereas Centipede was an above-average contestant in last year's show, Millipede is now a top contender.

Although Millipede utilizes the same format and controls as its predecessor, it offers many extra elements that test the limits of your skill. You still shoot from the bottom of the screen at a barrage of mushrooms, but instead of battling the original four insects, you now

face a deadlier force of adversaries: millipedes, inchworms, bees, beetles, mosquitoes, dragonflies, earwigs, and spiders. Naturally, each of these insects has unique characteristics that you must study.

Fortunately there is a new feature that can be used to the player's advantage: DDT bombs. Four of them appear each game. Shooting one of them releases deadly gas that destroys any insects, flowers, or mushrooms in the area.

Millipede might have finished in first place had it been released last year. But for now, it's still a very good game.



4TH RUNNER-UP

RESCUE

STERN URL

If you're a fan of Defender and Robotron, but find them too difficult to enjoy playing, you'll probably love Rescue.

You are the pilot of a helicopter over dangerous waters. Your chopper has the same maneuvering capabilities of a Defender ship, but it's all controlled by a joystick (like Robotron). And you can fire in eight directions using a second joystick (also like Robotron).

Your mission is to rescue a varying number of paratroopers from the water below. You must do this before they are eaten by

sharks. Beware of enemy subs, ships and helicopters.

Rescue has a number of subtleties that add challenge and realism to game play. If your chopper touches the water with its rescue ladder, it crashes; flying away before a paratrooper is all the way up the ladder will cause him to fall off; and striking a falling paratrooper with your chopper cuts him to ribbons.

The detail in Rescue's background graphics comes very close to a 3-D effect. Unfortunately, however, the choppers, paratroopers, and other game elements are less sophisticated.

5TH RUNNER-UP

SUPER PAC-MAN BALLY/MIDWAY

Super Pac-Man, one of three Pac-Man spinoffs introduced at the '82 AMOA show, is actually a totally new maze game featuring the original Pac-Man characters.

It's similar to the original in that Pac-Man races around a maze, feeding his face while outrunning monsters. There are also tunnels to run through and energy dots that make the monsters vulnerable to attack.

The differences are a little more complex. The "blocks" that make up the maze are filled with fruit or

other types of food. Pac-Man eats these items instead of gobbling dots. Each block, however, is sealed by one to four "gates." Eating the keys near each block opens the gates, allowing Pac-Man to enter—and munch.

But the biggest difference in Super Pac-Man is the inclusion of two "super dots" per screen. Eating a super dot temporarily transforms Pac-Man into Super Pac-Man. He becomes ten times his normal size and can gobble anything in his path. He is also temporarily immune to monster attack. And a speed button feature gives Super Pac-Man an added burst of speed.



MISS CHRONOLOGY TIME PILOT CENTURI

Time Pilot was a very talked-about contestant at this year's pageant. Unfortunately, Miss Chronology's game play doesn't quite measure up to its colorful and imaginative concept.

The basic idea of Time Pilot is that as you progress from screen to screen, you also progress through time. You begin the game in the year 1910, when your sleek jet is attacked by squads of biplanes. If you survive that battle you move through a "time warp" to 1940 where you battle WWII monoplanes. After that, you battle helicopters in the year 1970, and fight jet planes in 1983. Finally, you warp to the year 2001—"the age of the UFO." During each battle you must shoot 56 enemies as well as a mother ship.

The problem with Time Pilot is that it lacks complexity of game play; your "sleek jet" just isn't fast enough to muster real excitement. It moves like an Asteroids ship, but it's controlled by a single joystick. And the only challenge offered by your adversaries is in sheer numbers—there are a lot of them.

MISS CRAYOLA QUANTUM ATARI

Quantum is another one of this year's contestants that represents a nice idea, but fails to offer adequate game play.

Quantum is video's first true drawing game (Qix was the first). You create lines on the screen at any angle. You control the "sparkler" with Atari's Trak-Ball, leaving a light trail wherever you wish.

Various adversaries—electrons, photons, pulsars, splitters, etc.—fly across the space-like screen. Drawing a closed curve around any of these elements will eliminate it. If an enemy touches your line before it is a complete circle, the line disappears and you must try again. And if any enemy touches your sparkler, you lose one of three-to-five lives. Naturally, as the game progresses, more enemies enter the screen and the game speeds up.

One nice feature of Quantum is the ability to select your own starting level. Extra bonus points are awarded for starting at a higher difficulty level.

MISS FACELIFT SUPER ZAXXON SEGA ELECTRONICS

Super Zaxxon will appeal to fans of the original Zaxxon because it is virtually the same game with a few alterations.

The graphics of the "new" game are only superficially better than the original. You fly along a blue animated city, dodging walls and shooting enemies. Now, however, the rockets are hidden, and the turret guns fire at you from rotating bases. There are also extra enemies to contend with—"flying minelayers" and "self-destructing robot spacecraft."

The climax of Super Zaxxon is also very familiar. But instead of facing a rocket-shooting robot, you now battle a fire-breathing dragon. Like his mechanical ancestor, six shots (in the mouth) will do him in.

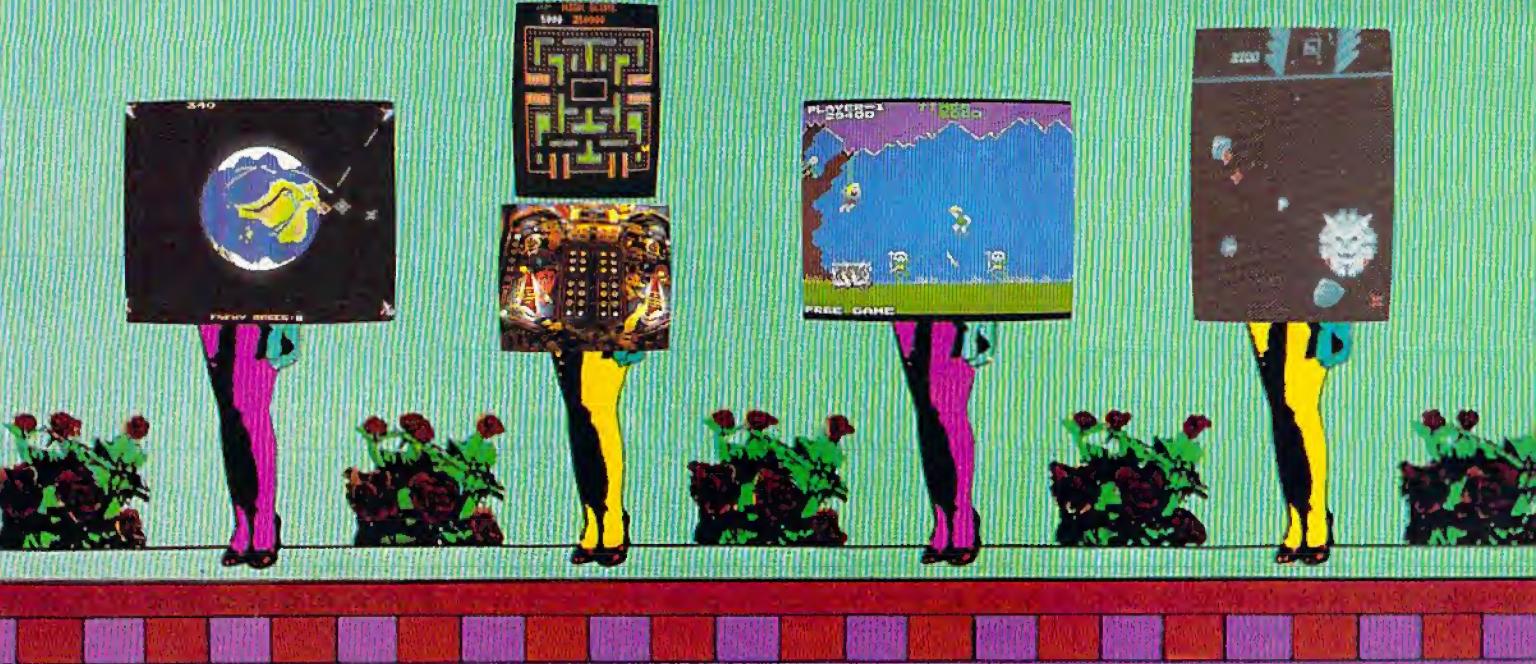
Although Super Zaxxon is every bit as good as—or better than—the original Zaxxon, it's still disappointing because it is merely an altered version of the original.

MISS PIGGISH POOYAN STERN URL

Pooyan "pig in Japanese" is perhaps the cutest contestant at AMOA '82. Its cartoon-like animation, cheery music, and storybook theme are all very appealing—but only to very young players.

The story revolves around a family of little pink pigs that is captured by a pack of wolves. The mama pig, who was not captured, attempts to save her chubby little family. Armed with a bow and arrows, she jumps into a cage that moves up and down on a rope. Meanwhile, the wolves use helium balloons to float down from a tree limb while throwing rocks at Mama. Naturally, Mrs. Pig tries to shoot the balloons with her arrows so that the wolves crash to the ground. If she misses, the wolves reach the ground safely and climb a ladder to bite her.

On the second screen, wolves use balloons to float to the top of a high cliff. If enough of them reach the cliff, they push a large boulder on Mama's cage turning her into pressed pork.



MISS ILE COMMAND LIBERATOR

ATARI

Rumor has it that Liberator was actually ready for production during the 1980 AMOA pageant. It was to be a "super" version of Missile Command. However, Atari supposedly kept this contestant out of the show for fear of it competing with the original Missile Command.

Actually, Liberator is more like an "inverse" Missile Command. Your goal is still to protect a planet from alien attack, but instead of fighting the alien ships from the planet's surface, your four fighters are now in orbit. You must locate and destroy the enemy "bases" on the planet's rotating surface. The familiar Trak-Ball controlled cursor still marks the spot where your ship will shoot. And your enemies still fight with slow-moving, blue "attack missiles." If you destroy all of the enemy bases, your fighters land on the planet's surface and you collect bonus points.

Liberator is a challenging (and colorful) game, but it's best thought of as the sequel to Missile Command and not as a new game concept.

MISS CONCEPTION BABY PAC-MAN

BALLY/MIDWAY

Exactly nine months after the introduction of Mr. & Mrs. Pac-Man, Bally/Midway has introduced another member of the Pac-Man family—Baby Pac-Man.

This young contestant is actually a combined video/pinball game, obviously meant to appeal to both types of players. Unfortunately, matching a below-par video screen with an equally poor pinball game does not a good game make—two wrongs still don't make a right.

The object of this game is to play the bare-bones video game long enough to switch to the mini-pinball field. Here you knock down an assortment of targets, in order to earn energizer dots and fruit, open tunnels, and gain speed when you return to the maze.

Although you can see why Bally/Midway thought this contestant might be a winner, perhaps the entrant's age is a problem. Baby Pac-Man is still too young to be considered a real beauty.

MISS LEGAL COMPROMISE JUNGLE HUNT

TAITO AMERICA

Don't be surprised if after playing your first game of Jungle Hunt you suddenly feel like you've played it before. You probably have.

Jungle Hunt is merely a cosmetically altered version of Jungle King. The alterations were made when the Edgar Rice Burroughs estate (the people who own the rights to Tarzan) sued Taito for copyright infringement—the original Jungle King looked and sounded too much like a Tarzan movie. So, Taito put a safari jacket on the game's main character, eliminated the opening Tarzan yell, and changed the background music. The game still covers the same four screens: swinging vines, a river of crocodiles, a rockslide, and vicious jungle savages.

And as if one cosmetic change wasn't bad enough, Taito then came out with a third identical game—Pirate Pete. It's the same game with the same four screens, except that all the characters are now dressed like pirates.

MISS CONSTRUED SINISTAR

WILLIAMS ELECTRONICS

A spokesman for Williams Electronics claimed that they originally intended for this year's contestant, Sinistar, to be a Defender-style space game. He didn't say they succeeded. Sinistar's dark background and bright elements might compare visually with Defender, but a more accurate comparison of game play would be to Asteroids or Bosconian. Perhaps Williams felt that anything that looks like a past success will be a success.

Your mission in Sinistar is to maneuver a slow-moving ship through a field of rocks and enemy ships. Shooting a rock a certain number of times causes it to vibrate and send off particles of energy. Running into these particles awards you points. If you don't pick the particles up, your enemies will use them to construct this game's best feature—Sinistar, the large colorful face on the screen above.

Unfortunately, Sinistar is another good idea that was poorly executed—a pretty game that fails to live up to Williams' past contestants.

INNERVIEW

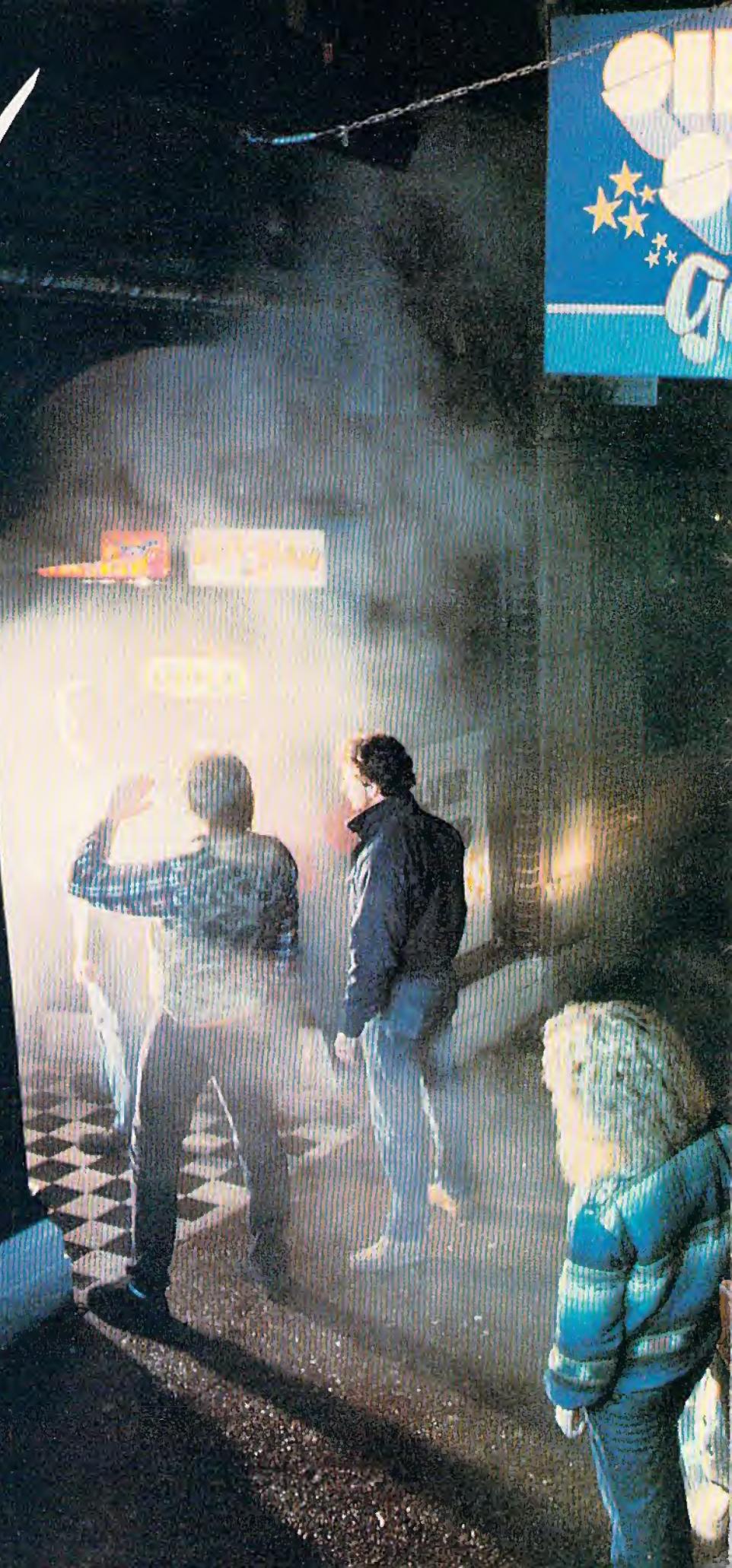
SILVER SUE'S: THE PROFESSIONAL'S PLACE TO PLAY

by Scott Phillips

Because of the Williams, Midway, Taito, Stern, and Gottlieb game factories that occupy its inner city and suburban industrial parks, the city of Chicago is, to many people, the video capital of America. But the one aspect of video gaming in which the City of Big Shoulders approaches mediocrity is in its arcades.

While other cities sport enormous, flashy arcades resembling video supermarkets, Chicago has tiny storefront game rooms scattered around town like so many neighborhood groceries. From the outside they all look alike, and most of them contain the same 10 or 20 machines.

Silver Sue's, located on Clark Street in the northern neighborhood of Rogers Park, appears to be such an arcade. Its blackened windows with two blinking video screens indicate nothing special to chance passersby. But after midnight Silver Sue's becomes something more than just another Chicago arcade. It becomes a late-night gaming center for Chicago's video game designers and programmers, and—admittedly—the staff of JoyStik magazine.





Photography by
Donna Preis and George Siegel

Silver Sue's

Silver Sue's

Silver Sue's

Silver Sue's

The founder of Silver Sue's is 35-year-old Susan England. A devoted gamer herself, Sue is responsible for creating the atmosphere that attracts, in her words, "serious players." How does she feel about designers and programmers playing games at her arcade?

"I love it. Designers are in there all the time, especially late at night. Larry [DeMar] comes in and he runs into a lot of computer artists there as well. Eugene Jarvis comes in sometimes, too—and he is *wild*. He'll nearly push a game through the wall when he plays. I almost threw him out one night when he hit a Defender screen so hard that it hit the wall and came bouncing back at him."

It's important to note that Larry DeMar and Eugene Jarvis, authors of Defender, Stargate, and Robotron, are personal friends of Sue's. When it comes to the rest of the designers that play in her arcade, Sue is friendly, but respects their right to anonymity.

"I maintain a real relaxed atmosphere. People like Eugene and Larry like to go in places and be anonymous. The 'celebrities' who come here come to *play*, not to strut. To some extent they crave anonymity. And I can understand that. I don't like being pointed out as 'Silver Sue' when I go somewhere else. That kind of attention can put too much performance pressure on you. Of course, I've seen a designer go over and ask a player some questions about a game, but that's strictly on a one-to-one basis. It is *not* a see and be seen scene. We cater to serious players."

Defining a "serious player" is tricky business, but Sue claims she can spot them as soon as they walk through the door.

"When a serious player comes in, he doesn't shop around, but goes right to the game he has in mind. When he gets there he'll be very intense, totally absorbed in the machine and totally unaware of the passage of time. If a crowd gathers to watch, he'll ignore it. Also, serious players tend to

scream when they lose. I'm a player and I know how it feels to lose, so I can commiserate."

According to Sue, this type of player only emerges at night. She contends that designers and programmers are simply in a different time zone.

"If you talk to any computer people, they'll tell you they work better at night, and that they work *all* night. There are no phone calls or business meetings to attend. So, I guess coming to my game room around 1 or 2 AM is kind of like their lunch break. They can relax and concentrate on something different for a while."

According to Sue, the "relaxed atmosphere" that she maintains is of prime importance for serious game playing.

"It's real dark, there's lots of music, and everybody just acts real cool and plays a lot of games."

That's actually an understatement of Silver Sue's carefully structured—and controlled—environment.

From the moment you enter Silver Sue's, your purpose is outlined for you. The room is totally dark, except for the glow from each game's screen. It is immediately clear that this is strictly a place for playing video games. According to Sue, this effect is no accident.

"People like to play video games in the dark. The lights from the other games don't interfere with your game."

After your eyes get used to the darkness, you'll need another few seconds to adjust your ears to the level of the music. It varies frequently from hard rock to jazz to 60s folk tunes (depending on who's behind the counter), but the volume is always high.

"One of my employees even brought in his own tape deck for us to use, because he didn't think our system was good enough. And some of the other employees spend hours recording special tapes. So there's always plenty of music."

Although Sue does believe in maintaining anonymity



where necessary, and focusing the players' attention on the games, that's not to say that the environment she creates is without a personal touch. She still wants her players to feel "like they're playing in their own living rooms." Her pet peeve is the increased use of change machines.

"I don't believe in change machines. No way would I ever own one. In my arcade you're not just somebody who puts money into a machine. You're somebody special. The people who work in my arcade get change for you. I'm just not an ostentatious person. I wear Levi's and tennis shoes, and I guess that comes across in my game room. This is everybody's place to enjoy, and they should enjoy it."

Of the players that "enjoy" Silver Sue's, Chicago's video game designers are perhaps the most serious about their games. And of those designers, Eugene Jarvis is the most outspoken. In spite of his off the wall sense of humor, he does have serious reasons for playing at Sue's.

"Silver Sue's is basically a low-key dive with nothing to distract you from the games. That's why it attracts the hackers [programmers] and the borderline mutants from the open ward. Plus, Sue is a good buddy of ours [Jarvis and Larry DeMar]. And her place is open real late. The brain damaged people come out around 3 AM—that's when we like to play."

Tim Skelley, the Chicago designer of Gottlieb's Reactor, also enjoys Silver Sue's.

"The light level there is very good. There's little reflection from the other games—that's really important. I like to have a feeling that it's me and the game. But it's also important for me to watch other people play. And there are usually a lot of people there. And the hours are pretty loose. That's important, too."

And Mike Schwartz, designer of a future Stern game, frequents Sue's for similar reasons.

"For one thing, it's a place to see new games that has

a really good atmosphere. I like the darkness and the loud music. And I can talk to other people in the industry there."

The fact that Silver Sue's has developed such a unique late night crowd of players is actually something of an oddity. Five years ago, when Sue England first opened her arcade, she had never even played a coin-op game. Naturally, the games were a lot different back then, but she remembers the transition from pinball room to video arcade.

"I started out with 12 games—almost all pinball. I remember I had one Laguna Racer—that was a black and white video game. I also had Tank and Breakout. The pinballs went like crazy, but the videos didn't get played much, because you couldn't earn any extra time on them back then. Then Space Invaders came out, and after that came Galaxian and Asteroids. Over the next two years, people just stopped playing pinball and I started carrying almost all video. But I still have a

couple of the old pins."

And as the video industry matured, so did Sue's affinity for video games. She soon became such an avid player that she now only enjoys what she considers to be "hard core" games.

"I love Defender, and I love Robotron, but I'm bored with all the cutesy games. You know, the Dig Dugs. Robotron is my favorite game."

And when she's not taking care of the business end of Silver Sue's, that's where Sue can be found, furiously scoring "almost a million points" on Robotron. In fact, she's such a Robotron fan that she currently has her own arcade Robotron machine in her home. "I like being able to play all the games I want," she says. And according to Sue, that's probably the best thing about owning your own game room—and one of the reasons that Silver Sue's is such a success. "It's being able to be a kid all the time!"



DOUBLE YOUR GALAGA FIREPOWER

by David Small

Most sequel games are the result of a predictable evolutionary step. The game play and goals of the original game are preserved (so players will know what to do), while the game elements are made faster and fancier. The popularity of Asteroids Deluxe and Ms. Pac-Man attests to the success of this approach.

But Galaga offers something entirely new, something Galaxian players never even dreamed of: the opportunity to double your firepower by use of the doubleship. Many players don't even know that this capability exists, but it is the most important change from the original Galaxian game.

In this article, we'll be showing you how and when to generate a doubleship. Then we'll explain what to do with it once you have it. The doubleship can be a liability in the hands of an inexperienced player—it doubles your target area—but following the advice presented here can turn that liability into an asset.



One of the most interesting, unique, and useful features of Galaga is the "beam up" performed by the green/blue flagships. By doubling your firepower, this maneuver can give you the opportunity to achieve the maximum bonus in Challenging Stages. The entire sequence goes like this:

- ▀ You survive the entrance section.
- ▀ During mid-battle section, a green/blue alien peels off and dives straight down in a markedly different pattern than the usual one-loop off to the side.

▀ The blue ship stops about two inches above the bottom of the screen.

▀ A strange "weeooh weeeoh weeooh" sound starts up (it sounds a little like Captain Kirk beaming up), and a blue energy field emanates from the bottom of the blue ship.

▀ If your ship is not in range of the beam up field, eventually it retracts and the green/blue ship drops straight down to return to formation.

If your ship is in range, it is caught and is whirled up to rest beneath the flagship. At that point, the message "FIGHTER CAPTURED" is displayed, and the green/blue ship returns to the top of the formation, dragging your ship behind. A foreboding musical tune is played.

If you have another ship, you begin playing with it. If you don't, the game is over. (NOTE: Never, never get captured when you only have one ship! Every Galaga player I know has made this mistake; check before you beam up to be sure you have another turn.)

Now, one of your ships is in the enemy formation. If you shoot your own ship, you get 1,000 points, but lose the extra ship—you don't want to do this under any circumstances. Be very careful where you shoot when you have a captured ship in formation. For instance, you can shoot at a yellow ship to the side of the captured ship, have the ship and its escort swoop off and run right into your shot.

Again, every Galaga player around has had this happen; a little caution goes a long way.

If you shoot the enemy ship (that has captured your ship) while it is in formation, eventually the captured ship will swoop down on you. Don't destroy it. It will disappear off the bottom of the screen and go away. But all is not lost; it will reappear as the last ship to enter on the next entrance screen. Be very cautious about shooting at the last wave of yellow aliens when they enter! Your captured ship will appear at the tag end, then take its place at the top of the formation. Some players use this as an expert's technique to store a captured ship.

Let's assume your captured ship still has its escort. It will eventually swoop down on you with its escort. It always fol-

lows the same pattern; it heads for one side or the other, with one loop in the middle. Be very patient, and do not try to hit the enemy escort in mid-flight; it is very easy to miss the enemy and hit your own ship! Wait until the ship is within an inch of the bottom, line up with it and hit the enemy escort exactly in the center.

If the enemy ship is green, you will have to hit it twice to destroy it. If it is blue, you only need to hit it once. If you succeed in destroying the enemy ship, a marvelous thing happens, one of the greatest things about this game: your ship is freed, and it joins your currently playing ship! Voilà! Your firepower exactly doubles.

For those who have a difficult time staying alive due to the increased target area of the double-ship, I recommend getting the doubleship for only the Challenging Stages. For those who are used to it, I recommend getting a double-ship on Stage 1 and using it thereafter until at least Stage 12. If I have a doubleship, and it gets destroyed by accident, I will always restore it until Stage 12 or above. Is the increased target area a liability? No, it actually helps you stay alive, for not many enemy ships make it through the entrance stage if you use your doubleship to its fullest, most ferocious capabilities.

By the way, the enemy with your ship in tow always seems to dive to the same side. So once you find out which side it will dive to, do this:

▲ Move to the opposite side. Wait until the ship peels off.

▲ The ship will fire at your old position. Move to the other side—to its destination.

▲ Wait until the enemy ship is by itself, towing your ship. This may require some judicious cleanup of other ships. Take your time and clean them out; this will prevent them from shooting at you in your new position and destroying you.

▲ Line up exactly under the descending enemy ship. It is very easy to hit your captured ship by accident, so be careful. This maneuver takes some practice. If you are very close to the right position to begin with, it will be much easier.

Now, any enemy ships in mid-dive will return to formation. While this is happening, you have a free shot at the whole formation. (Your captured ship will be suspended in mid-space, spinning. Do not hit it!) Pick off as many ships as possible in the formation.

The Galaga doubleship gives you more firepower than is available in almost any other game. Use it wisely, and watch your score grow.





WEST COAST GAME MANUFACTURERS:

by Doug Mahugh

WHAT'S NEW FROM SEGA, ATARI, NINTENDO, AND OTHERS

Chicago is the center of the video game world, the home of five of the top eight game manufacturers, and the host of the biggest coin-op trade show in the world (the AMOA expo). It's also the home of JoyStik, and being so close to the heart of the industry allows us to keep close tabs on what's new and what's next.

But—as most players know—the video game industry wasn't born in Chicago, it just grew up here. The West Coast is where it all really started. Whether you point at Nolan Bushnell and the company he founded ten years ago in Silicon Valley (Atari), or look all of the way back to the origins of the pinball industry—to 1929 when Harry Williams started a route in Los Angeles County—California and the West Coast can take credit as the birthplace of coin-op video games. And it didn't stop at the beginning; there's still a lot of activity out there, in the offices and factories of Sega, Atari, Nintendo, and others. We recently sent a JoyStik editor and camera crew to the West Coast to see firsthand the latest developments from these companies—this article is their report.



Photography by Donna Preti and George Siegel

Sega Electronics, San Diego

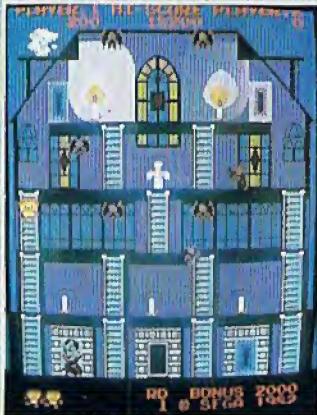
The most obvious—and least significant—development at Sega is their name change. Formerly known as Sega/Gremlin, they opted for Sega because the old combined name was "a bit awkward" according to Chairman of the Board David Rosen.

Sega has recently started a consumer division, which will design cartridges for the fiercely competitive home system market. Though they were so strict about security that we could only talk to designer Gary Shannon in a completely barren conference room, we were able to learn that their first offering will be Star Trek, a cartridge for the Atari VCS. It's scheduled for release some time this year.

New venture notwithstanding, the coin-op department is where the real activity is at Sega these days. The same people that brought us Zaxxon, Turbo, and Frogger have recently released Pengo, Sub-Roc 3D, Tac-Scan, Buck Rogers, Monster Bash, and Super Zaxxon. Though they had not been officially released yet, we were able to find the latter four games at a suburban San Diego shopping mall arcade called The Yellow Brick Road.



Pengo (covered in detail on page 46) is based on a rotund penguin battling with animated sno-bees in an ice block maze. Sub-Roc 3D uses a stereoscopic 3D effect that is more irritating than entertaining, while Tac-Scan is a multiple-ship space game done with color vectors (like Tempest). Buck Rogers won the JoyStik AMOA Beauty Pageant (page 6) because of its flashy graphics. Super Zaxxon is just what you'd expect—Zaxxon with superficial enhancements, and Monster Bash looks like Donkey Kong in a haunted house. They're all good games, but with the possible exception of Tac-Scan they don't show much originality.



Sega has also been showing off their latest development in laser-disc technology: Astron Belt, an extremely realistic prototype of a laser-disc video game that uses stored footage of real explosions. (See page 62 for more on Astron Belt.)



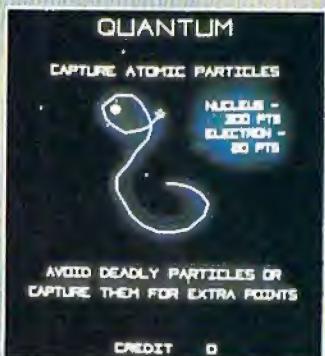
Atari, Sunnyvale

Atari, the grand old man of video games, has a new complex in high-tech, security-conscious, Silicon Valley that looks more like a bunker than a multi-million dollar corporate HQ. Squat, sprawling, and virtually windowless, the building's architecture reinforces an atmosphere of secrecy and paranoia that is made explicit in the sign that clearly forbids cameras, trespassers, and casual visitors.

They seem to be saying: "Games are serious business." We're not arguing—who couldn't take these games seriously? With only four new games for this year, Atari has managed to pack in more quality and variety than any other manufacturer. Liberator, Quantum, Millipede, and Pole Position are the games, and they have almost nothing in common except the Atari label.



Liberator (described in detail on page 11) is basically Missile Command in reverse, with a few new twists. The most impressive and entertaining part of the game is an animated spaceman face that tells you how you're doing.



Quantum (see page 10) offers the most original game play of any of the Atari games. Its drawing action is a step up from Qix (the only other true drawing game) in that it allows you to draw segments of any length at any angle. The game may be too subtle for some players, but it offers a new sensation in the arcades.



Millipede is the sequel to Centipede, which came out in mid-1980. The changes from Centipede are numerous, but they are all so subtle that only Centipede players will notice them. One of the nicest effects is the replanting of the mushroom field, which follows the rules of classic population dynamics. All in all, Millipede is a great game that may never be popular simply because of the strength of its predecessor.



Pole Position is the last of the new Atari games. It is a driving game similar to Turbo (see page 7 for details), and is more realistic than any driving game we've seen to date. The perspective on other cars when you pass them is particularly nice—it gives you a very accurate indication of where your car is relative to the other cars, which even Turbo (the best driving game before Pole Position) failed to do.

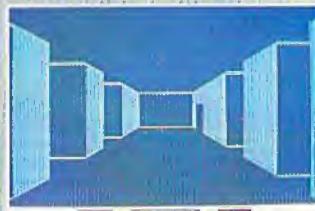


Starpath, Santa Clara

In direct contrast to Atari, the atmosphere at Starpath (formerly known as Arcadia) is classic laid-back Californian, complete with T-shirts, torn jeans and a communal candy box. This casual attitude, however, hasn't prevented Starpath from gaining a reputation for producing high quality games for the Atari VCS. The games are all played through a Supercharger, which increases the capacity of the VCS. Communist Mutants From Space is perhaps Arcadia's best known game—because of its catchy title—but this funky company is also responsible for winners like Phaser Patrol, Suicide Mission, and Fireball.

Starpath's two latest cassettes are Dragon Stomper and Escape From The Mind Master. Both are "multi-load" games. This means that several variations on a common theme are provided on a single cassette. After you progress through one level, you load the next level and automatically start playing it.

Dragon Master is a DnD (Dungeons & Dragons) adventure game. The most obvious difference between it and the many other adventure games available for the VCS are the graphics. As usual, Starpath has provided more color and detail than anyone ever expected from the VCS.



Escape From The Mind Master is a "1st-person perspective maze game." You move through a maze of corridors: the screen is a representation of what you would actually see. To look around a corner, for example, you must move to a position where you can see down the side corridor. This gives the game a very different feel from the Pac-Man type of maze game, in which the entire maze is always visible.



Videa, Sunnyvale

"There is a large technological gap between state-of-the-art computer displays and what is being used in the marketplace today. We know that we can do a lot better, and that is the spark that created this company."

That confident and optimistic message comes from Roger Hector, president of Videa. Videa was formed a little over a year ago by Roger Hector, Ed Rotberg, and Howie Delman, three ex-Atari employees with thirteen years of collective experience in video game design behind them. Hector, the former Corporate Manager of Research and Development at Atari, handles the administrative chores for Videa; Rotberg, a former Atari programmer (he designed Battlezone), is Videa's Vice President of Software; Delman is Vice President of Hardware, and was responsible for much of the work on Atari's vector display system.

The combined talents of these three men makes Videa a very promising company. According to Hector, "We don't want to just do iteration after iteration of new games—we see ourselves doing only the state-of-the-art games." Although he couldn't give us any details about the games they are working on—which will hit the streets in mid-1983—he did tell us that they would be far beyond the technology currently found in the arcades. We'll be

keeping you informed on this exciting new company in the future.



Nintendo, Seattle

When we visited Nintendo, their south Seattle plant was producing Donkey Kong, Jr. games literally as fast as they could get them out the door. However, now that Popeye has been released the production emphasis will undoubtedly shift to that game.



Popeye has a little more color and detail than Donkey Kong or Donkey Kong, Jr., and a little smoother animation. Other than that, it is very similar to them—Nintendo seems to believe that players still want another cute character game. Popeye is as good a game as either of its predecessors, but it may be a little late.

THE ARCADES OF SEATTLE

by Doug Mahugh

Pac-Man Bob is a man used to winning. During the days of Pac-Mania, when Pac-Man tournaments were being held almost weekly in every major city around the country, Pac-Man Bob traveled from contest to contest, looting promoters of cash and prizes. When he heard of a Pac-Man contest being staged in Seattle, he confidently set out for the Jet City, certain that he would easily nab the grand prize—a trip to Hawaii.

But the contest didn't go according to Bob's plans.

Had he been any less confident of himself, he might have taken notice of the fact that the other contestants weren't the 13- to 19-year-olds that usually attend such events. They were older, in their 20's and 30's, and none seemed particularly nervous or excited about the prospect of playing for huge stakes in front of a large crowd. Ignoring all of this, Bob just settled down and played one of his best games ever.

Pac-Man Bob's efforts netted him third prize: dinner for two at a local restaurant. Welcome to Seattle.

Pac-Man Bob's experience is not unique.

Most players know their hometown arcades very well. They know which games are popular, what kind of people play them, and where the best game rooms can be found. But—and this comes as a surprise to many players—things aren't the same all over. An experienced game player from Albuquerque, for example, might find the arcades of Chicago dark and forlorn, if he could find them at all.

In this and future articles, we'll be looking at the arcades of various parts of the country. How do they differ? Which games are popular?

What kind of people play them? We won't be making any comparisons or judgements—we still think the best place to play is wherever you happen to be at the time—but we want to share with you the rich variety of arcade customs and customers that can be found around the country.

That video games are very popular in Seattle isn't surprising. In a city known for year-round rain and cloudy weather, indoor recreation of any kind is sure to be popular.



Arnold's On The Ave



Command Center

But Seattle's arcades offer more than a chance to come in out of the rain—by combining large and modern arcades with restaurants or bars, many game rooms in Seattle allow players to enjoy a meal or a drink right at the controls of their favorite video game. This is a big step—in the right direction—from the stilted and sterile atmosphere of less progressive arcades, where food and drink are not even tolerated, let alone provided.

Arnold's On The Ave, one block west of the University of Washington campus, is one of the biggest, and possibly the best, of Seattle's eat-in arcades.

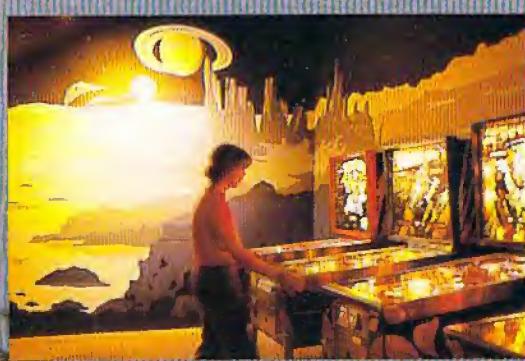
Stocked with over 70 of the most popular videos and pins, Arnold's offers 24-hour-a-day convenience and a variety of food. Because of its location—next door to the School of Computer Science, directly between several dormitories and the main University of Washington campus—Arnold's draws more customers in a single day than many arcades can hope for in a week.

Goldie's On 45th, less than two miles west of Arnold's, is an equally popular place to play, offering 60 of the latest games. Because Goldie's is a test location, it is often the first place in the Pacific Northwest to receive a new game. They serve beer and wine, so the clientele is all over 21.

Bogey's, on the east side of Lake Union, is another video game bar with approximately 40 videos and several pins.

In addition to these restaurant/arcades and bar/arcades, Seattle has several large "conventional" arcades. **Lectric Palace** on the north side and **Command Center** in the southern suburbs are both large and well-decorated, with carpeted floors, mural paintings, and only the latest games. **Ivory's**, on Fifth Avenue in the center of town, is a little less fancy but draws a large coat-and-tie clientele from the surrounding office buildings.

The arcade game players around Seattle are very competitive for two major reasons. First, many players are students at the University of Washington or employees of high-tech corporations like Boeing and have technical backgrounds. Second, many arcades give a cash prize for the high score of the week on selected games, providing an incentive for serious players to improve their game. And occasionally a major tournament will offer players the opportunity to compete for thousands of dollars in cash or prizes. Incentives like that can turn a soggy Seattlite into a video pro—just ask Pac-Man Bob.



Lectric Palace



Goldie's on 45th

STAR RAIDERS TRAINING MANUAL

by Jim Gorzelany





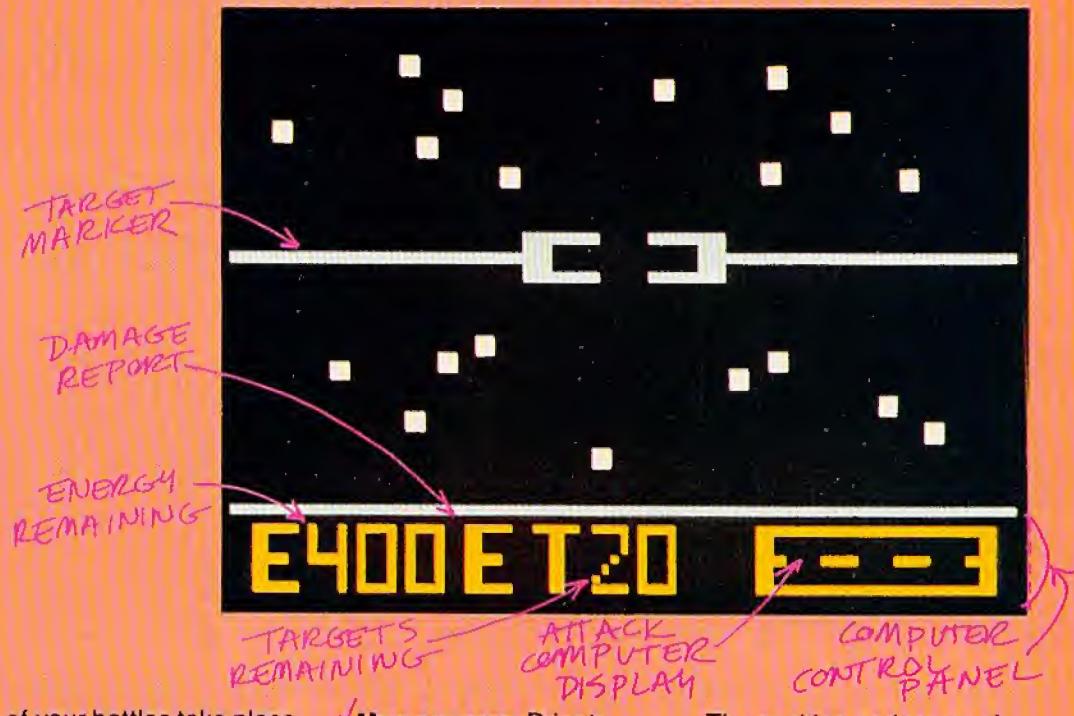
Attention all recruits! The training manual that follows will aid you in your upcoming combat missions against the dreaded Krylon space warriors. To practice the critical galactic battle maneuvers you must perfect before engaging your star fighter in actual combat, you will need Mission Simulator CX2660. For security reasons, it has been disguised as a home video game cartridge for the Atari 2600 Video Computer System. It is known on the planet as "Star Raiders."

The 2600 VCS cartridge is derived from the original Star Raiders mission simulator created for the Atari 400/800 home computer. As with the original, you must destroy a preselected number of Krylon ships as they close in on and attempt to destroy your starbase, which is located in a distant sector of the galaxy. This game is scaled down a bit to compensate for the technical limitations of the 2600 game system. For example, unlike the 400/800 version, you have no control over the speed of your star fighter (your on-board computer takes care of it here).

Despite these and other limitations, the flight missions in Star Raiders are difficult to master. The Krylons are a cunning lot. Their battle craft are smaller and faster than yours, and can easily outmaneuver you.

Study this manual carefully—it details valuable strategies that will aid you in your battles with the Krylons. The manual was prepared with the help of Commanders Todd and Scott Rogers, who courageously braved death many times to help develop the strategies included herein. Good luck, and may the power of the Cosmos envelop your spirit throughout the conflicts that beckon.

I. FORE VIEW



YOUR MISSION
Save the galaxy from invading Krylon warship fleets of varying (10-, 20-, 30-, or 40-target) sizes. Located in one sector of the galaxy is your starbase, where you can refuel and repair damage to your star fighter. You must defend it well. Should the Krylons destroy it, you'll be without a source of fuel and repairs, and vulnerable to destruction yourself.

If you successfully complete your mission the computer will evaluate your performance and assign you a rank based on: 1) the number of Krylons involved in the mission; 2) the number of energy units you have left; and 3) the number of times you visited the starbase for refueling and repairs. The lowest regular rank is "Cook," the highest is "Nova." A rank of "Eagle" or better is considered excellent. The most advanced Star Raiders are awarded a "mystery rank," known to only a few extremely talented star fighter pilots.

YOUR STAR FIGHTER

Your ship is equipped with photon torpedoes and one of the most advanced tracking computers in the solar system. It is protected by high-technology shields. You can hyperwarp your craft to any location in the galaxy. Your Star Raiders mission simulator is packed with a special "keypad controller." This miniature version of a star fighter's cockpit panel plugs into the right controller port of your Atari 2600. It controls five specific functions: fore view; galaxy map; hyperwarp; computer; and shields.

Fore View: This is the scene through the cockpit window of your star fighter. The fore view is where all

of your battles take place. There is a control panel located at the bottom of the fore view (see I). The control panel indicates: 1) remaining energy units; 2) remaining Krylon targets; and 3) damage sustained by your star fighter. The degree of damage is indicated by the color of the four letters that are alternately displayed at the center of the control panel. "P" refers to your photon torpedoes; "E" to your engines; "S" to your shields; and "C" to your attack computer. Green letters mean that the components are functional and undamaged. A yellow letter indicates a damaged, but functional, component. Red letters indicate destroyed components. (See the "Emergency Maneuvers" section for more on repairs.)

Gal Map: This grid (see II) indicates the present position of: 1) your star fighter (blue bar); 2) the Krylons (red wing); and 3) your starbase (blue atom). A red bar is displayed in the sector you are going to (see Hyperwarp).

Hyperwarp: Prior to engaging hyperwarp engines, direct your star fighter by using the joystick to move the red bar in your present sector over to the sector of your destination (see II, Your New Position). Then press the hyperwarp button to engage engines.

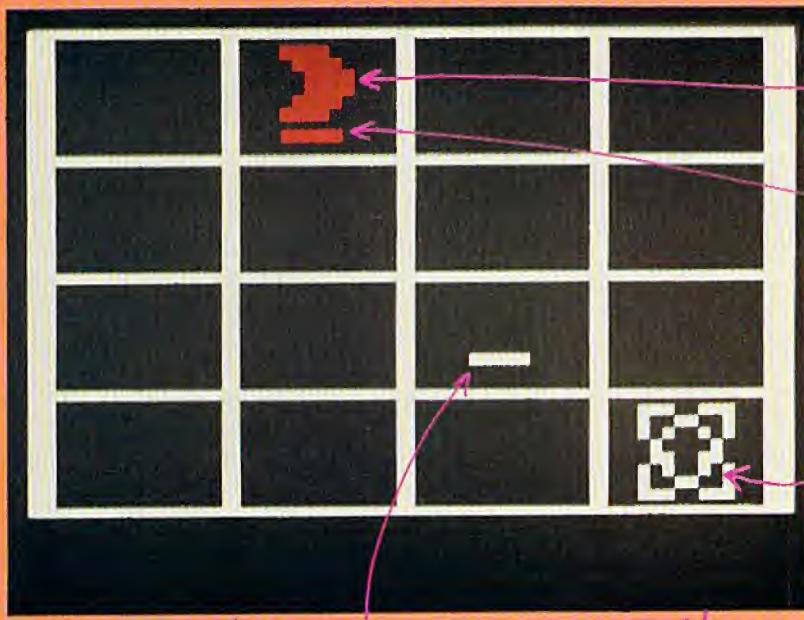
Computer: The attack computer automatically "locks-on" tracks and Krylon targets. When the enemy is visible in your fore view, the computer will automatically steer your ship to follow. It can keep up to two Krylons in your sights at a time. Both photon torpedo tubes will fire when a target is locked-on. When a target is not locked-on, only one torpedo tube will fire. Verify a locked-on Krylon ship by checking the attack computer display (refer back to I) located in the lower right-hand corner of the screen. When a dot is lined up in the center of the display the computer will emit a high-pitched tone. This means that the targets are locked-on; it is the best time to begin firing your photon torpedoes.

The position and range of the Krylons (in relation to your star fighter) is indicated by the background color of your bottom-screen control panel. Red indicates that Krylon ships are behind you; green indicates that they are in front and out of range (or have moved to another sector of the galaxy); and blue indicates that they are visible and within range.

A target marker appears in the center of the screen; it serves as a cross-hairs for aiming purposes.

Shields: Shields prevent your star fighter from being destroyed by Krylon torpedoes and asteroids. They should be engaged at all times when battling the Krylons or entering an asteroid belt. When they are up, the fore view background is blue; when they are down, the background is black. **Warning:** your shields are not invulnerable. They can be damaged or destroyed if they sustain a great number of hits.

II. GAL MAP



YOUR PRESENT POSITION

KRYLON
SECTOR

YOUR
NEW
POSITION

STARBASE

Automatic Pilot Option: If you choose to keep your attack computer on for the entire mission, you can override the video touch pad controller by setting the left VCS difficulty switch to position "B." To keep your shields on for the entire mission, set the right difficulty switch to "B."

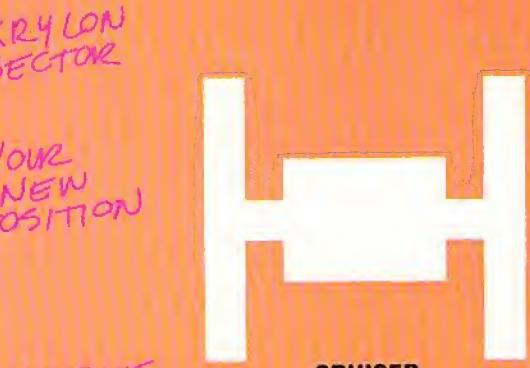
Each of your star fighter's functions (engines, computer, shields, etc.) depletes a certain number of energy units. In addition, hyperwarping costs you energy units per sector jumped. For example, jumping one sector at a time will cost you 20 energy units, while jumping six sectors at a time will drain 150 energy units (30 more than if you jump the six sectors one at a time).

Energy conservation tactics will be discussed in the strategy sections on the following pages.

ENEMIES & HAZARDS

There are three types of Krylon ships: cruisers, fighters, and basestars (see III).

Fighters and cruisers are the easiest to destroy. Though their flight patterns are erratic, your photon torpedoes can destroy them at any range. Basestars, which are protected by shields, are more difficult to destroy; your torpedoes are effective against them only at close range.



*CRUISER
DESIGNED FOR SPEED
& MANEUVERABILITY*



*FIGHTER
CAPABLE OF
INFlicting HEAVY
DAMAGe*



*BASESTAR
PROTECTED BY
DURABLE ATTACK
SHIELDS*



*ASTEROID
HAZARDOUS, PARTICULARLY
LATE IN THE BATTLE*

III. ENEMIES & HAZARDS

FLYING YOUR STAR FIGHTER

Use the left joystick controller to maneuver your ship: right = starboard; left = port; forward = dive; back = climb. The red action button fires your photon torpedoes.

ENERGY — — — — —

Your end-of-mission rank depends on using as few energy units as possible to destroy the Krylons. You begin each mission with a given amount of energy that varies according to the difficulty of your mission. You can hyperwarp to the starbase for refueling (and repairs) up to seven times during a mission.

Throughout the mission, the Krylons will advance upon your starbase as a group. Their rate depends on the number of remaining targets. For example, with 40 ships remaining, the Krylons will move at a rate of approximately one galaxy sector every 70 seconds. With only ten ships left, the fleet moves at a much faster rate—one sector every 30 seconds. If your tracking computer is switched on your star fighter will automatically follow the Krylons into the next sector, but there will be a seven- or eight-second delay.

In both the early and late stages of your mission you will also encounter stray asteroids floating in your flight path (see III). While this assortment of space debris will not fire upon you, your star fighter will incur damage if an asteroid smashes into it. You should either steer clear of the asteroids or vaporize them with your photon torpedoes.

IV. COMBAT

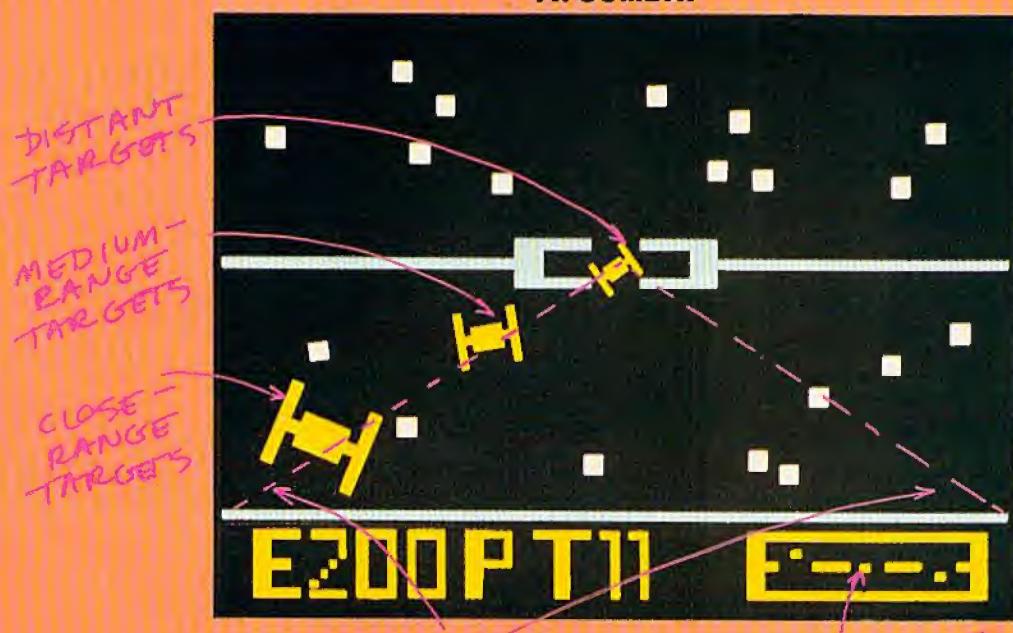
EARLY MISSION STRATEGY

After selecting a mission (10-, 20-, 30-, or 40-targets), and pressing GAME RESET, summon up the galaxy map and check the Krylons' position in the galaxy. In 10- and 20-target missions they will always be on the opposite side of the galaxy from your starbase. In 30- and 40-target missions the Krylons will be randomly placed in the galaxy. Hyperwarp to the Krylons' position one sector at a time to save energy. If you are flying an advanced mission and the Krylons are occupying a sector near your starbase, hyperwarp directly to that sector to save precious time.

After hyperwarping, engage your shields and punch up the fore view to prepare for battle. You will encounter a small asteroid belt. Avoid these asteroids instead of wasting precious energy blasting them.

Once you're clear of the asteroids, engage your attack computer—the first wave of Krylons will follow almost immediately. Pay attention to the color of the control panel to learn where the Krylons are in relation to your star fighter. If the aliens are in front of you and out of range (panel green), disengage the computer to save energy until the Krylons are in your sights.

If the Krylons are behind you (panel red), you must immediately make a 360-degree turn. Pull the joystick down on an angle, either to the left or right. Your ship will simultaneously turn and dive, keeping you out of the line of the Krylons' fire for a few seconds. As they pass overhead and in front of you the attack computer will lock-on to them.



If the control panel is blue, the Krylons will be in front of you and within attack range, and you can begin the battle immediately.

COMBAT STRATEGY

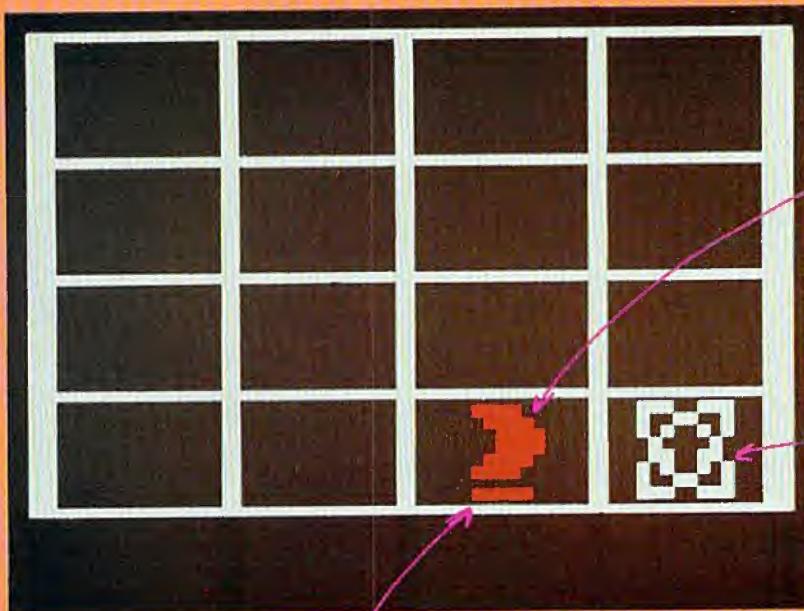
Knowledge of your effective firing range is essential when battling the Krylons. Your photon torpedoes fire in a straight path from the bottom corners of the fore view screen, up to a point at the center of the screen (see IV). However, only a target that is at its farthest visible point at the center of the screen will be destroyed by a torpedo hitting dead center. Closer targets (they will appear larger on the screen) can be blasted when they are nearer the bottom of the screen along your line of fire; farther targets (they will appear smaller) can be destroyed when they are nearer the center of the screen along this same line of fire.

Do not fire blindly. Wait for the Krylons to come within your effective firing range. Advanced pilots can anticipate and fire just before the enemy moves onto the imaginary diagonal plane. When under Kylon torpedo fire, you should practice the "sit, shoot, and run" method of attack. Sit in one place and let the Krylons come to you. When a Kylon is close, he will hesitate within range for a split second in order to get a bead on you. Confuse the Kylon by firing at him first and then diving to the left or right. Even if you miss the Kylon ship, you will be out of the range of its torpedoes for a few seconds. If you are under heavy fire, alternate between shooting and avoiding the Krylons' torpedoes.

Next, pay attention to your computer display. If the control panel is green and the target marker is blue, the remaining aliens have moved on to another sector. Immediately: 1) disengage your shields and computer (to save energy); 2) summon up the galactic map; and 3) hyperwarp to the sector the Krylons occupy to continue the battle. Do not waste time waiting for your computer to automatically hyperwarp.

BEST STARS ARE PTFE
MOST DANGEROUS KRYLON
SHIPS -- YOUR PHOTONS
ARE EFFECTIVE AGAINST
THEM ONLY AT CLOSE RANGE.

V. LATE MISSION



KRYLONS

STARBASE

HYPERWARP TO STARBASE FOR
REFUELING / REPAIRS

EMERGENCY MANEUVERS

During your mission you may run low on energy or incur damage to your star fighter.

Low Energy: Keep an eye on your energy reserve; when it registers lower than 100 units, you should immediately hyperwarp back to the starbase for refueling. If it is late in the mission, hyperwarp to the starbase in one direct flight to save time. But be sure you have enough energy left in your tanks to reach the starbase. In 30- and 40-target missions your star fighter will explode if you attempt to hyperwarp without sufficient energy. In 10- and 20-Krylon missions your on-board computer will automatically prevent you from hyperwarping in this situation.



Damage: One visit to your starbase will repair all onboard damage. However, not all damage is critical; only certain damaged functions need be repaired immediately.

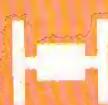
When your photon torpedoes are damaged, only one tube will fire. You can generally finish a battle with only one torpedo tube, and should wait until there is a break in the action, before hyperwarping to your starbase for repairs.

When the photons are destroyed they will only fire intermittently and should be repaired immediately.

When your engines are damaged your star fighter will become a bit difficult to steer. This should be tolerated as long as possible. When the engines are destroyed you will lose almost all maneuverability, and need immediate repairs.

When your shields are damaged the fore view background will flicker. Hyperwarp to the starbase immediately. If you are hit by the Krylons' fire when your shields have flickered off, you will be destroyed.

When your attack computer is damaged, the control panel at the bottom of the screen will turn black and you will receive no audio warnings. When it is destroyed, you will lose all other computer functions. This is the least serious of all damage; you can always fly without your attack computer in a pinch. Put off repairing a damaged or destroyed computer until you need other repairs or refueling.



CAUTION: WITH ONE
KRYLON REMAINING, YOU'LL BE
PLUNGED INTO AN
ASTEROID BELT.

Starbase Destroyed:

When the Krylons have successfully destroyed your starbase, you will hear three musical tones. Caution: you must now complete your mission without a source of fuel and repairs. Proceed with caution. Avoid the Krylons' fire at all costs.

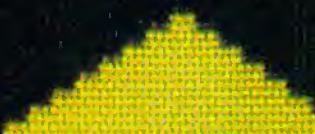
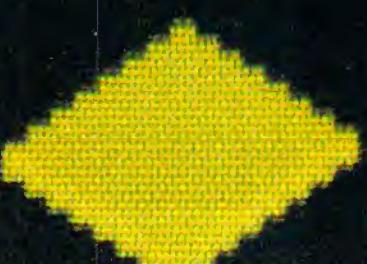
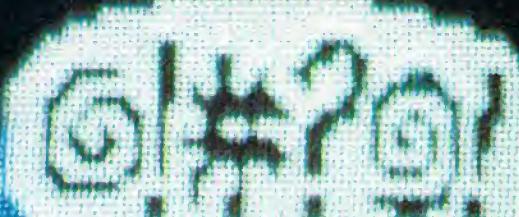
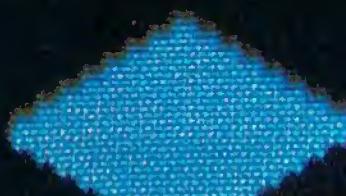
LATE MISSION STRATEGY

Keep a close watch on the Krylons' progress through the galaxy as the battle nears its conclusion. Summon up the galaxy map from time-to-time to see where they are in relation to your starbase. When they are in a sector near your starbase (see V), hyperwarp there immediately if you need repairs or are running low on energy. If you have an adequate energy supply, but more than half of your targets still remain, hyperwarp back for refueling anyway. It may be the last chance you get.

When there's only one Krylon target left in the mission, the simulator plunges you deep into the middle of an asteroid belt. This is where the final battle with the Krylons takes place. You'll really need a steady hand to steer clear of this never-ending supply of space debris. If you're low on energy and/or your shields are damaged or destroyed, you'll need to concentrate on avoiding asteroids to stay alive for as long as possible. If, on the other hand, you can spare the energy units and your star fighter is not seriously damaged, it is easier to "go for broke." Keep firing and you'll destroy the final Krylon and any asteroids in your path.



NEO



Q*B

Q*Bert

by Doug Mahugh

Nobody likes to be told what to do, and Q*Bert is the first talking game that respects this fact. All of the other talking games that we've seen try to tell you something important or taunt you with insults and dares. Not Q*Bert—although recognizable words and phrases can come out of his invisible mouth, they're never intentional. He just randomly strings together a few sounds and blurts them out; there's an equal chance that he'll say your name, his name, or your favorite four-letter word. And this mindless, reckless abandon has already made Q*Bert the most-listened-to talking game ever.

In this article, we describe the many characters in the game of Q*Bert and explain how to use and/or avoid them. We also take you through the first four levels of the game, and show you what to expect when your score starts to climb. After reading and studying these tips, you'll be able to confidently handle any situation Q*Bert might find himself in. The only things we can't help you prepare for are the things Q*Bert might say. Nobody—not even Q*Bert himself—knows what those might be.

CUBES

28 cubes make up the pyramid on each round, and Q*bert must change all of them to the same designated color before progressing to the next round. The color of a cube is changed by jumping on it. Changing a cube to the correct color scores 25 points. On the highest levels, cubes change color each time you jump on them; if you jump on a cube that is already the correct color, it will change again. For these levels, changing a cube to an intermediate color is worth 15 points. Jumping off any of the edge cubes will cause Q*bert to fall to his death—unless he lands on one of the discs, described below.

COILY

Coily is Q*bert's biggest problem. He hatches from a purple ball that tumbles from the top to the bottom of the pyramid. Coily is very aggressive, and will follow Q*bert all around the pyramid, usually just one or two jumps behind. The only way to stop Coily is to lure him off the edge; do this by jumping onto a disc, as described below. This will earn a 500-point bonus and clear the pyramid of all other characters, which buys you a few seconds of safe time to change more cubes to the correct color.

UGG AND WRONG-WAY

Starting with the third round, you'll have these two annoying characters to contend with. Like Slick and Sam, they're really just two versions of the same character. But unlike all of the other characters, they both start at the bottom of the pyramid and move upward. This means that they can surprise you easily if you're used to only looking up for trouble. So, have your wits about you after the third round, and look both ways before you leap.

GREEN BALLS

The green ball, which appears on the third round and every round thereafter, is a great asset. Jumping on it will momentarily freeze all of Q*bert's enemies. You will also score 100 points, but the freezing action is what's most important. Q*bert is still free to move while the other characters are frozen, so you can change many of the cubes if you use the time wisely.

RED BALLS

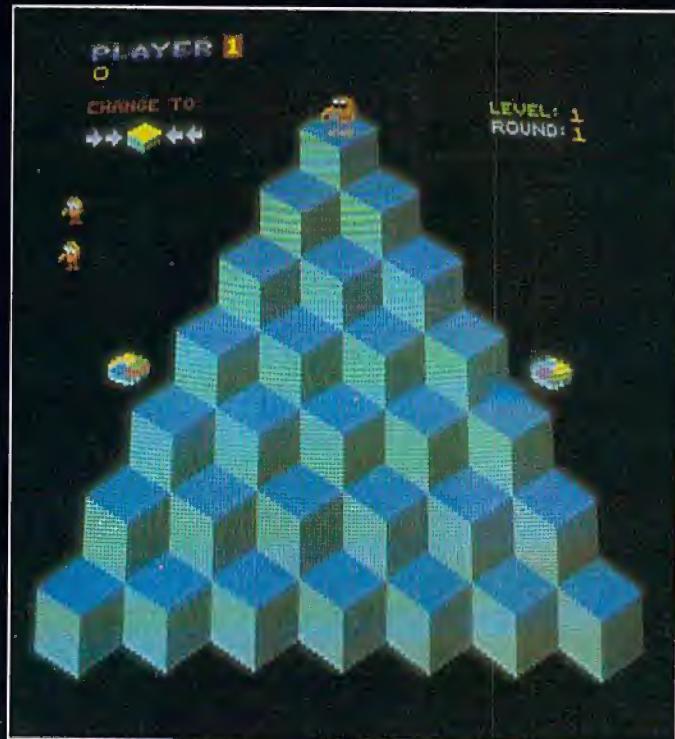
Their behavior is very similar to that of the green balls; they land on the second level of cubes (from the top) and randomly hop to the bottom. The only difference is that these balls are deadly to touch. It's easy to remember the difference, though—green means go ahead, and red means stay away. This is true for all of the characters—if it's green, it's safe; otherwise it's deadly.

DISCS

These colorful spinning wheels are Q*bert's escape hatches. When the going gets tough, you can jump on a disc and be safely transported back to the top of the pyramid. If Coily is following close behind, he'll fall to his death—with a realistic scream—when you jump to the disc. Each disc can only be used once, so don't use them unless it's the only way out. A 50-point bonus is awarded for each unused disc at the end of a round.

SLICK AND SAM

Starting on the third level, Slick and Sam begin to appear. They are really the same character in two different guises; each will start at the top of the pyramid and meander down to the bottom, following a random path. Each time Slick or Sam lands on a cube, he changes its color, and Q*bert must go back and change that cube to the correct color again. The only way to stop Slick or Sam is to jump on him—this scores 300 points.



LEVEL ONE !#?@!*

Even if you've never played Q*bert before, the first level won't present much of a problem. There are very few enemies to contend with, and the pace is relaxed. Be careful not to fall off when hopping near the edges of the pyramid, and use the discs to trick Coily into jumping to his death.

Level 1, like all of the levels, is made up of four rounds. A round is completed whenever you change all of the cubes to the correct color. A 1000-point bonus is awarded for finishing the first round, and the bonus increases by 250 points for each subsequent round. The maximum possible bonus—5000 points—is achieved on Round 2 of Level 5.

During the first two rounds, Coily and the red ball are the only adversaries you must deal with, so you'll have plenty of free time to hop around and get used to the feel of the game. Starting with Round 3, Slick and Sam will appear and mess up your artwork. Jump on them at the first opportunity.

LEVEL TWO !#?@!?

The first two rounds of Level 2 include three discs, one more than any of the previous rounds. The extra disc is very helpful, because now there are many adversaries to deal with: Coily, Ugg, Wrong-Way, Slick and Sam. In addition to the three discs, you'll have the green ball to use. As explained earlier, the green ball can be used to freeze your opponents while you change the cube's colors.

In this level the way that the cubes change color is different from Level 1. Each cube's color must be changed twice. First, the cube is changed to an intermediate color, and then the intermediate-colored cubes must be changed to their final color. It's easy to lose track of which color is which on this level, so refer to the cube in the upper left corner of the screen whenever you're confused. It will show you which color is your final goal.



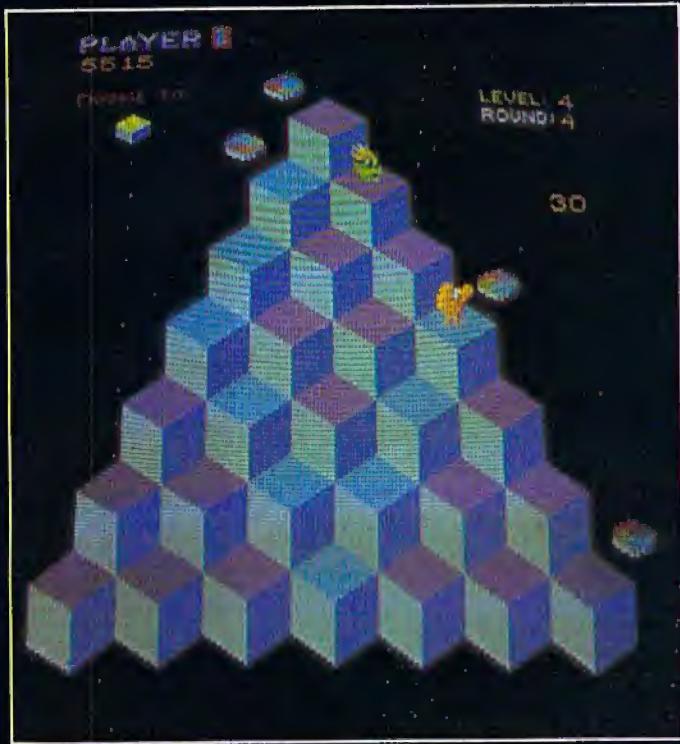
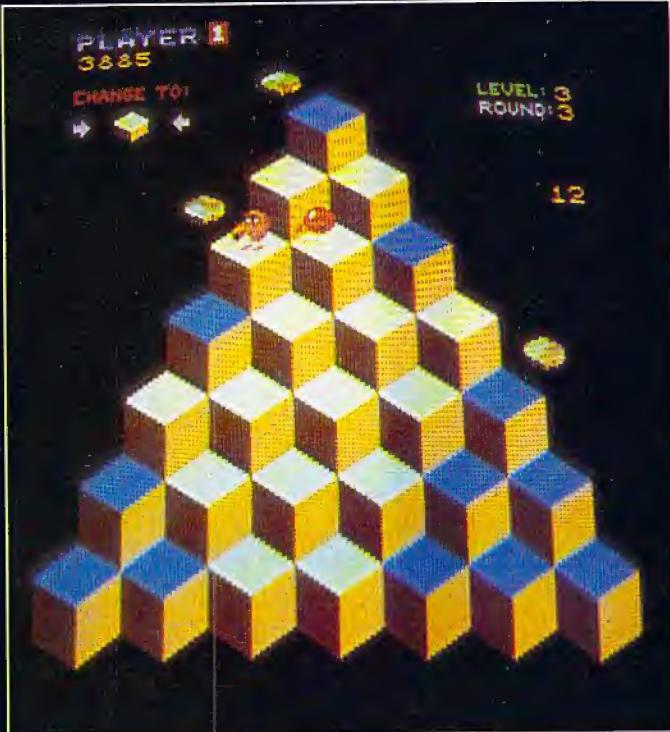
Coily and the red ball.



The three discs.



The three cube colors.



LEVEL THREE! !?@!

If you found the changing colors of Level 2 cubes confusing, this level will make you wish it was that simple again. Starting with Level 3, every hop on to any cube will change that cube's color. Even if you've already changed a cube to the correct color, it will change again if you return to it. Then you'll have to return and change it to the correct color once more.

There are more discs in Level 3 than in Level 1 or 2: four in each of the first two rounds, and three in the last two rounds. Use them whenever possible, but don't be too hasty when jumping to a disc. Sometimes you must wait for Coily to come closer before jumping on the disc—otherwise he won't fall (literally) for your trick.

LEVEL FOUR! !?@!@!

Only the very best Q*Bert players can make it to Level 4 consistently, so don't be disappointed if it takes some practice just to see it for the first time.

The bonus for completing each round is up to a healthy 4000 points in this level, and there are more opponents than ever before. There are up to six discs in the rounds of Level 4, so use them whenever possible to rid the screen of Coily and his cronies. You need the

green ball more than ever—be thankful it appears in every single round.

Q*Bert will be talking more than ever in these rounds. Don't let his idle quips distract you, and you'll conquer the cubes.

THE WINNING EDGE

by Eric Ginner

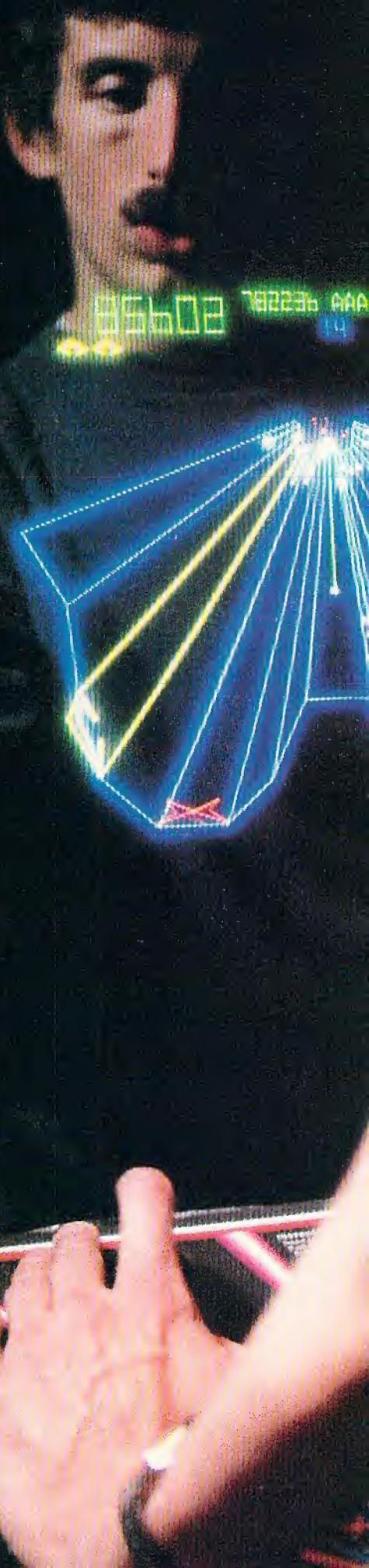
TEMPEST

For this month's "The Winning Edge," we flew to Seattle to interview veteran Tempest player Mike Sharpe. Mike had been a dedicated player for over a year, and consistently records the high score on machines wherever he plays. Although many players think of Tempest as a game of timing and fast reactions—which it certainly is—we learned from Mike that good Tempest playing also requires a sound strategic approach like the one outlined here.

To assure that these advanced strategies were accurately presented, we asked Eric Ginner—a million-point Tempest player himself—to write the article. (If Eric's name sounds familiar to you, it's probably because he was the subject of our last "The Winning Edge" column, which covered Centipede.) In addition to general observations about playing the higher levels, Eric threw in a special trick: the "secret jump to green" described on page 41. We used this trick for the strategy screens on pages 40 and 41, and can attest that it works exactly as described.

Don't forget—"The Winning Edge" is written especially for advanced players. The strategies presented on the following pages apply to the yellow level and all higher levels. If you're having trouble getting to the yellow level, try this: sit in one spot and tap the fire button until your arm falls off. In the blue and red levels, there is no need to move because there is never more than one fuseball, and it won't come to the top until the end of a wave. If you get overwhelmed by flippers, use the superzapper. Save your second superzapper for the fuseball when it goes to the top level.

Ed. note: Because of his expertise in a wide variety of coin-op games, we have asked Eric Ginner to take over "The Winning Edge" column. Future columns will cover Zaxxon, Ms. Pac-Man, Stargate, Dig-Dug, and other games.





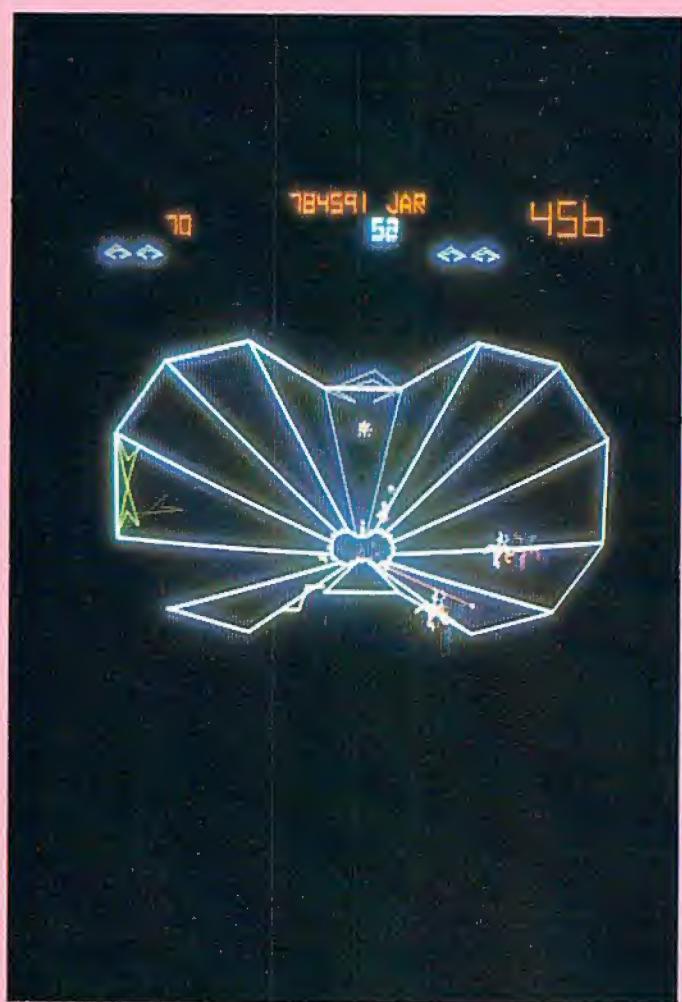
YELLOW LEVEL

Two new enemies are introduced in the yellow levels: the fuseball tanker and the pulsar tanker. Regular tankers have an empty hole in the middle, but a fuseball tanker has a piece of a fuseball in the hole and a pulsar tanker has part of a pulsar in the hole.

Fuseball tankers are the most deadly. They will split into two fuseballs, often sending them straight to the top. When you shoot one, move over at least three lanes to be safe from the fuseballs.

Pulsar tankers split into two pulsars, one on each side of the tanker's lane. Shoot the tanker and stay in that lane. The pulsars will be on each side of you. Tap the fire button repeatedly and they will flip right into your lane where your shots will be waiting for them.

There are no spikers until level 41, so clearing lanes won't be a problem. After level 41, try to keep three or four lanes clear instead of only one. Sit in one lane, wait until the pulsars are off, spray shots over three lanes, and move back. This should give you a safe corridor to stay in.



LIGHT BLUE LEVEL

Everything is a little faster in the light blue levels. In addition, spikers are in all 16 levels, so it is more important to keep the lanes free of spikes for the trip through the tube. Use the same strategy of sitting in one lane and sweeping your shots over three lanes while the pulsars are off. You will have to speed up the rhythm because the pulsars are faster.

The best lanes to stay in are the ones that give you the most margin for error in shooting the flippers. Flippers are vulnerable longer when they have to flip more than 180 degrees. For example, the best places on the peanut-shaped level are the two middle lanes.

Be very careful if you don't have time to completely clear a lane of spikes. As you start down the tube, all shots in the tube will disappear; don't get stabbed by a spike you thought was shot away.





INVISIBLE LEVEL

The invisible level is the most fun, and the most frustrating.

In this level the outline of the tube is invisible, but the spikes can help you to see which lane you're in.

Many experts can work their way up to the invisible circle in only one game. They will often get stuck there, however, unable to get to the next bonus level.

Until now, the next bonus level was never more than four levels away. But in the invisible level, you have to finish eight levels to reach the next bonus level. Use the yellow level strategy again, but only try to clear three lanes instead of four. The fuseballs are extremely fast, and you will often see five on the screen at one time.

Don't worry about clearing lanes for the end of a wave. The spikes are so soft in the early invisible levels that you can whittle away a full-length spike while on the way down the tube.



GREEN LEVEL

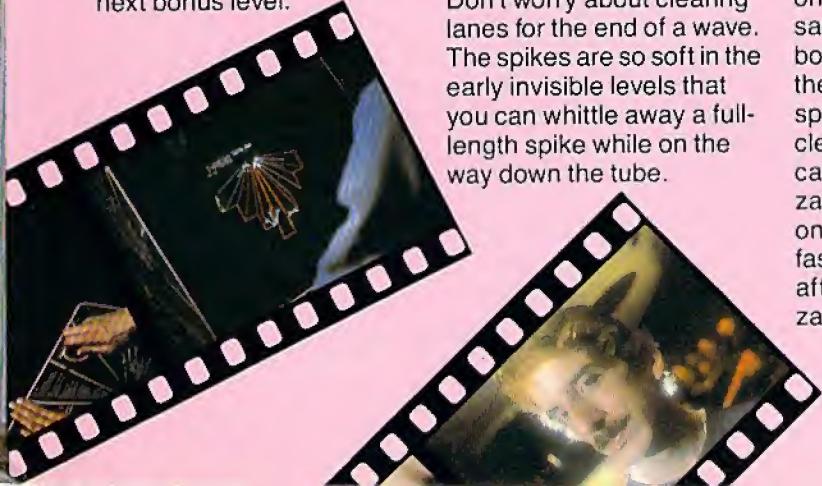
The green is the last bonus level, and some players find it easier than the invisible level because you can see where you are going. Once you've made it, you're on green levels until you run out of lives, no matter how far you go. After level 96 (the green figure eight), green levels come up at random.

The spikes are a problem on all green levels and pulsars are deadly even at the bottom of a tube, where they are protected by long spikes. Keep three lanes clear on green levels. Be careful with the super-zapper, which kills enemies one at a time. Fuseballs are fast enough to kill you even after pushing the super-zapper button.

SECRET JUMP TO GREEN

Here is a trick for getting to the 898,000 point green level without playing all of the way up to it. It can only be done on some Tempest machines because Atari has corrected the problem on the newer machines.

Get a score between 180,000 and 200,000. Shoot spikes until the last two digits in your score are 46, and then lose all remaining lives with your score ending in 46. The machine will then go into the attract mode (push the fire button quickly to enter initials if necessary). Wait at least until the word "Tempest" in big white letters appears twice, and you will be able to start a new game at any bonus level!



THE GAME DESIGN GAMBLE

PART 1: THE CONCEPT

by Doug Mahugh

Could you design the next Pac-Man, Donkey Kong, or Defender? If you think you could, or you'd like to try, then this article is for you. We'll be looking at the video game design process in detail, and trying to answer the questions we hear most often from our readers: Who designs games? How is it done? What do manufacturers and operators look for in a game? And along the way, we'll try to answer the million-dollar question (literally)—what makes a game popular?

This is the first in a series of three articles. This time, we'll look at some of the factors that affect the way a game looks and plays. The final game that makes it into the arcades is usually the result of many compromises, because different aspects of a game are important to designers, manufacturers, and operators. After discussing their

concerns, we'll be prepared to delve into the specifics of hardware and software in the next two articles.

The terms hardware and software have become very common in the last few years, but some people still aren't certain of the distinction. A simple and non-technical definition might be: hardware is anything you can hold in your hands, and software is anything you can hold in your head. So your address and phone number are software, while your mailbox and telephone are hardware.

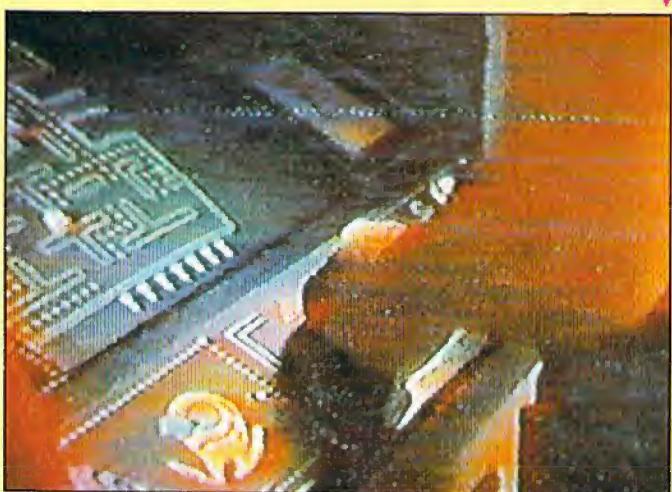
In the hardware article (next issue), we'll look at the various parts of coin-op game, and at some of the hardware that is used by designers. The following issue, we'll look at software and programming techniques. We can't possibly present everything you'll need to know to design video games, but we'll try to present an overview of the process, in order to help you understand what the work of a video game designer is like.



- Who designs games?
- How is it done?
- What do manufacturers and operators look for in a game?
- What makes a game popular?

Successful designers must "pay their dues," just like in any other industry. The chance of designing a smash hit video game on your first try is as small as the chance of writing a best-seller the first time you pick up a pen. But with enough hard work and dedication, who knows—maybe you *could* design the next Pac-Man.

Photography by Donna Preis and George Siebe



Is Pac-Man popular because its controls are so simple?



Or is Defender popular because its controls are so challenging?



Joust—the best animation in a video game yet.

Although the game design process may at first seem completely arbitrary, there are common concerns that all designers must consider. These include the controls, the type of motion, the presence or absence of risk-taking incentives, the prevention of infinite play modes, and the player's perspective.

The layout of the controls is very important, since awkward controls can be one of the first things that will turn players off to a game. In general, the controls should be intuitive, so that the player will not be distracted by them. Pac-Man is a good example of a game with intuitive control—its single 4-direction joystick's effect is so obvious that it requires no explanation.

In some games, however, mastering the controls is just part of the game's challenge. This is usually the case in games that offer complete freedom of motion in all directions (in a plane), like Asteroids and Defender. For many games of this type the controls have become standardized, so that familiarity with one game will allow you to play others competently. Asteroids has the most-copied "standard" control layout: left and right rotation buttons for the left hand, thrust and fire for the right hand, and hyperspace in between. This format, or hints of it, can be found in games as diverse as Omega Race, Stargate, and Space Invaders (the originator of Asteroids' left-hand controls).

Another consideration is the type of motion to be used for various elements of the game. Some characters look good as a single shape that moves across the screen, but others are more realistic with animation. Technically, animation can be applied to all motion in video games, since it simply means the successive repositioning of inanimate objects. But in video games, animation specifically refers to the effects obtained by cycling through some set of different versions of the same object. This is what makes Joust's buzzards appear to flap their wings as they move across the screen.

The presence of risk-taking incentives is an important part of any game. Since most players are score-oriented, the chance to receive a large bonus at the risk of losing a turn is a good way to let a player's own greed limit his playing time. Many players would rather have a short, high-scoring game than a long, lower-scoring one, even though the latter is obviously a better bargain.

Speaking of long playing times, one of a game designer's most common fears is that players will uncover an infinite play mode—some obscure trick that allows them to tie up a game for hours without really playing it. "Lurking" in Asteroids is such a trick, although it isn't necessarily easy to do. The parking places in Pac-Man are a more obvious problem, since the player can even walk away from the machine without losing a turn.

The player's perspective in a game can have a radical effect on the game play. In *Battlezone*, for example, the player is inside a tank, looking out in one direction (this is called 1st-person perspective). The possibility of opponents coming from behind, where they can't be seen, is what keeps the game exciting and interesting. *Battlezone* would probably be very dull as a 2nd-person game, with the player watching the battlefield from above. *Defender*, on the other hand, might have become hopeless and confusing if it were implemented as a 1st-person flying game (which was, in fact, the original game concept).

In addition to the above considerations, there are three groups of people that the game designer must please: the manufacturers, the operators, and the players.

Once the basic game concept has been refined, it is usually presented to the manufacturer with storyboards, in the same manner that movie and TV show ideas are sold. Manufacturers look for several things in the game: player appeal, potential public image or copyright infringement problems, and the ease with which the game can be mass-produced.

Copyright infringement is a particularly important problem—Nintendo and Taito are two manufacturers that have had problems with this lately. Nintendo went to court over the similarities between *Donkey Kong* and *King Kong*, and Taito was forced to change *Jungle King* to *Jungle Hunt* because of possible infringement on the copyrighted Tarzan character.

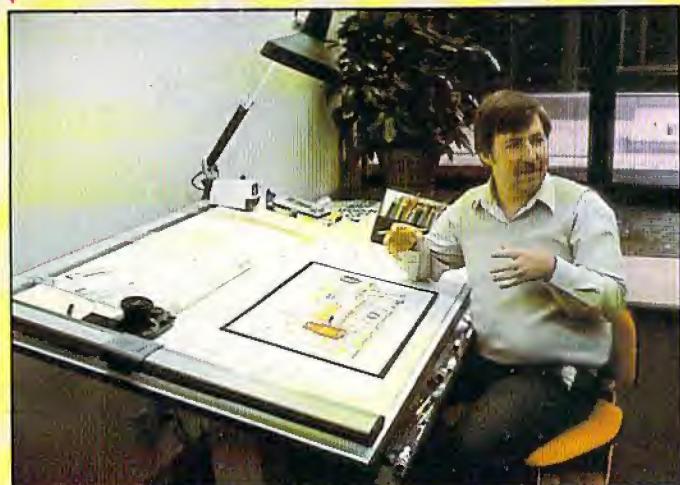
Once the manufacturer is convinced that a game is worth pursuing, the designer is teamed up with the necessary hardware and software specialists.

While these people work on creating the game, the manufacturer begins selling the idea to operators and distributors, usually via trade publications like *Play Meter*, or the Amusement & Music Operators Association (a.k.a. AMOA) annual show.

Operators have many of the same concerns as the manufacturer, but in addition they want to be sure that the game hardware will be reliable (based on the manufacturer's reputation) and that the game will be a lasting hit. It's interesting to note that the manufacturers really don't care about a game's longevity; since games are sold, and not leased or rented, once the manufacturers have saturated the market with machines it's almost better for them if the game falls in popularity, thereby making room for newer games.

The last step, after the game has been designed and is in production, is for the operators to put it out in the bars, arcades, and convenience stores where the players will be the final judges of the game's success. Despite all of the planning that has gone into the game at this stage, there is never a guaranteed hit in the video game business.

The next two articles in this series will cover the hardware and software used in the design of video games.



Roger Hector explains the storyboard for a possible game.



A manufacturing facility in full production.



Does this look too much like a Tarzan movie? Taito was told that it does.

THE ARCTIC ANTICS OF PENG

by Steve Sanders

Two years ago, driving games were just part of video game history—manufacturers couldn't give them away. Then, in the fall of 1981, Sega/Gremlin came out with Turbo, and it quickly became the most popular driving game of all time.

Last spring, the space game genre was fading fast. Defender and Asteroids had yielded to character games like Pac-Man and Donkey Kong, and almost overnight the industry's emphasis changed from "get tough" to "get cute!"

But Sega/Gremlin did it again: they came out with a space game, and Zaxxon rocketed to the top of the coin-op charts.

Well, now even the cute games are in trouble. Pac-Man isn't the reliable quarter-sucker it once was, and recent character games have had trouble even making a name for themselves (witness Kangaroo). But Sega/Gremlin, true to their audacious form, has come out with another better-late-than-never winner: Pengo. It's still too early to tell whether Pengo will follow in Turbo's and Zaxxon's enviable footsteps, but we think that Sega/Gremlin (now officially renamed "Sega") deserves a pat on the back for consistently doing everything wrong and making it work out right. Read on and discover the secrets of Pengo, the newest member of a defiantly successful family.

ELEMENTS

Pengo

This red penguin waddles around the screen under your control. He can move up, down, left, or right, and is controlled by a four-way joystick. He also has the ability to push ice blocks into his adversaries; this feature is activated by the "push" button.

Pengo's goal is simply to rid the screen of sno-bees by crushing them with ice blocks. To do this, you must maneuver Pengo into a position where a single ice block stands between him and a sno-bee, and then push the ice block into the sno-bee. The ice block will slide across the screen, pushing the sno-bee ahead of it, until colliding with another ice block or the wall.

Sno-Bees

The sno-bees are Pengo's one and only enemy. They are small, furry creatures armed with a hammer and an ice pick. Their goal is not only to crush ice blocks, but also Pengo. In the first four rounds sno-bees appear up to three at a time, and in later rounds there are four constantly active sno-bees. There are four ways to kill the sno-bees, each of which will be explained later in this article.

Ice Blocks

The ice blocks are what the maze is mainly made up of. There are approximately 110 in every maze configuration. The maze configurations are, however, fairly random, with about thirty different possibilities of maze configuration for each game.

Diamond Blocks

In every maze there are three diamond blocks randomly scattered among the ice blocks. These diamond blocks are entirely indestructible. But if you can line them up—all three blocks in a row, with their sides touching—you can earn bonus points. You can earn 10,000 points for lining them up the middle, and 5,000 points if they are along one of the walls.

The Walls

On the outside of each maze there are four impenetrable walls that are very useful to Pengo.

Sno-Bee Eggs

In every maze configuration there are sno-bee eggs randomly scattered in various places among the ice blocks. At the beginning of each round the sno-bee eggs show themselves by illuminating the ice blocks in which they are hiding.

There are eight sno-bee eggs in the first two rounds, ten eggs in rounds three and four, and 12 eggs in each round thereafter.

Every time one of the active sno-bees is killed, one of the eggs hatches and makes a new sno-bee. While it is impossible to exactly determine which one of the sno-bee eggs will hatch next, it usually is the egg nearest to Pengo.

The Blobs

The deadly sno-bees are also cowards, and sometimes, if only one of them is left near the end of a round, a buzzer will sound; this buzzer signals the sno-bee's metamorphosis into a blob. A blob is about 1½ times the size of a sno-bee, twice the speed, and will head directly for one of the four walls, destroying everything in its path. When a blob reaches the wall it will head for one of the four corners of the maze, unless there is a diamond block along the wall. If a diamond block is present, it will head for that. In either case, when a blob reaches its destination it disappears, thus completing the round.

Bonus Times

After each round is completed the bonus timer appears and shows the number of seconds Pengo took to clear the preceding round. Then a bonus is awarded, depending upon how much time Pengo took. From 0-19 seconds a 5,000 point bonus is awarded; from 20-29 seconds 2,000 points; from 30-39 seconds 1,000 points; from 40-49 seconds 500 points; and from 60 seconds on up there is a trade-off—no bonus is awarded, but there is no penalty inflicted for the amount of time consumed.

Intermissions

After the bonus is awarded for any even-numbered round, there is a brief intermission. The intermissions feature eight penguins performing various routines. In the first intermission the Pengos do a small marching routine. In the second intermission they "shake their booty." In the third intermission each penguin stops and salutes you. In the fourth, the penguins turn to face you and then do jumping jacks as they exit the screen. In the fifth intermission the source of the game's background music is revealed—it's Pengo himself, playing a mean piano. And in the sixth intermission, Pengo appears from behind the piano to play "peek-a-boo" with you. Unlike many other video games (with a limited number of intermissions), as long as the game goes on, more and more intermissions are shown. They are shown in the following order: 1, 2, 3, 4, 5, 6, 5, 6, 1, 2, 3, and so on.

CONTROLS

Joystick

This maneuveres Pengo up, down, forward, and backward. Pengo can safely move anywhere on the screen, including along the walls which surround the maze.

Push/Crush Button

The push/crush button will push an ice block through an open space if it is pressed when Pengo is being maneuvered by the joystick against that ice block. However, if there is no open space in front of the ice block, then the ice block will be crushed. The diamond blocks are moved in a similar manner. However, if there is no space in front of a diamond block, then the block will neither be moved or crushed. The push/crush button will also activate the freeze mode on the walls.

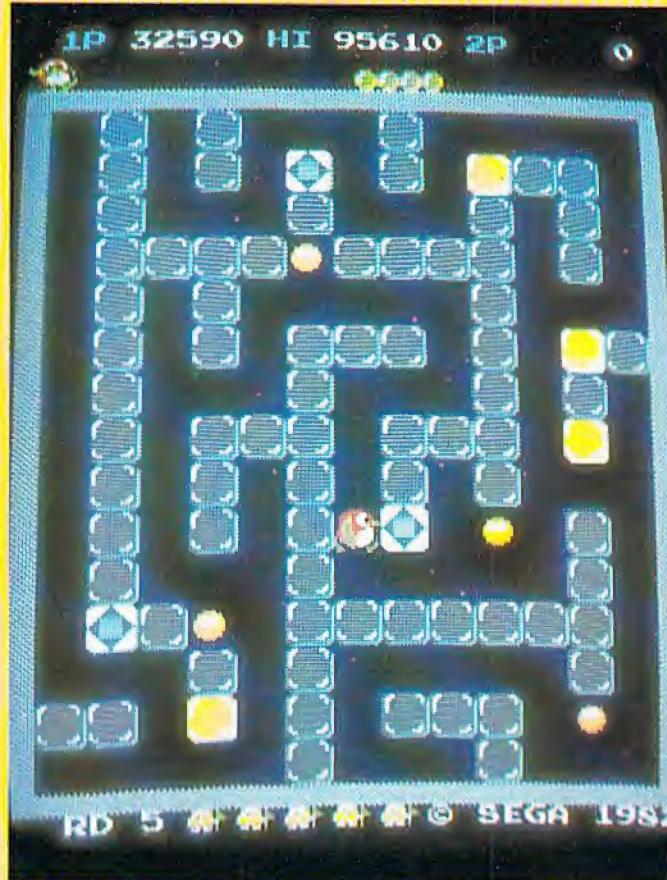
STRATEGY

Unlike most maze-type games, the playing of Pengo is not based upon patterns, so you never know which maze configuration will appear next. The key to Pengo strategy is simply kill or be killed. But there are many and various ways that are used to employ this strategy. In the beginning rounds the main strategy to use is to crush the sno-bees with the ice blocks or diamond blocks. However, in later rounds, as the sno-bees get faster and more aggressive, you will have to employ more advanced strategies, such as the wall strategy and the advanced diamond block strategy.

Sno-Bee Strategy

The sno-bee strategy is the main strategy of the game, with the objective of crushing sno-bees by pushing ice blocks against them.





Egg Strategy

This strategy requires a fairly good memory, since you must be able to remember where the eggs were revealed at the beginning of each round. Once you know where they are, you should maneuver

Pengo to an egg-hiding ice block and crush it, thereby killing the egg and earning 500 points. Do not, however, get greedy and immediately try to crush three or four eggs at the beginning of

each round. If you do this, the sno-bees will rapidly track you down, force you into a corner, and kill you. It is best to play conservatively and only kill one or two eggs at the beginning of each round.

Wall Strategy

The wall strategy is a strategy entirely unique to all video games. Unlike most video game walls, this wall is not merely a boundary which contains the maze. Instead, it is also a useful weapon against the sno-bees. Whenever Pengo is touching a wall and one or more of the sno-bees is touching the same wall, press the joystick toward that wall and depress the push/crush

button. The wall will vibrate and activate a freeze unit. At this time, every sno-bee or blob along that wall will be rendered completely vulnerable, and Pengo can destroy them by simply running over them.



Diamond Block Strategy

As was mentioned earlier, whenever the three diamond blocks are lined up side-by-side, a bonus is earned—10,000 points for placement in the middle of the screen, and 5,000 points for placement against the wall. Also, immediately after the bonus is earned every sno-bee that was not turning a corner before the blocks were lined up will become frozen, just as if the wall

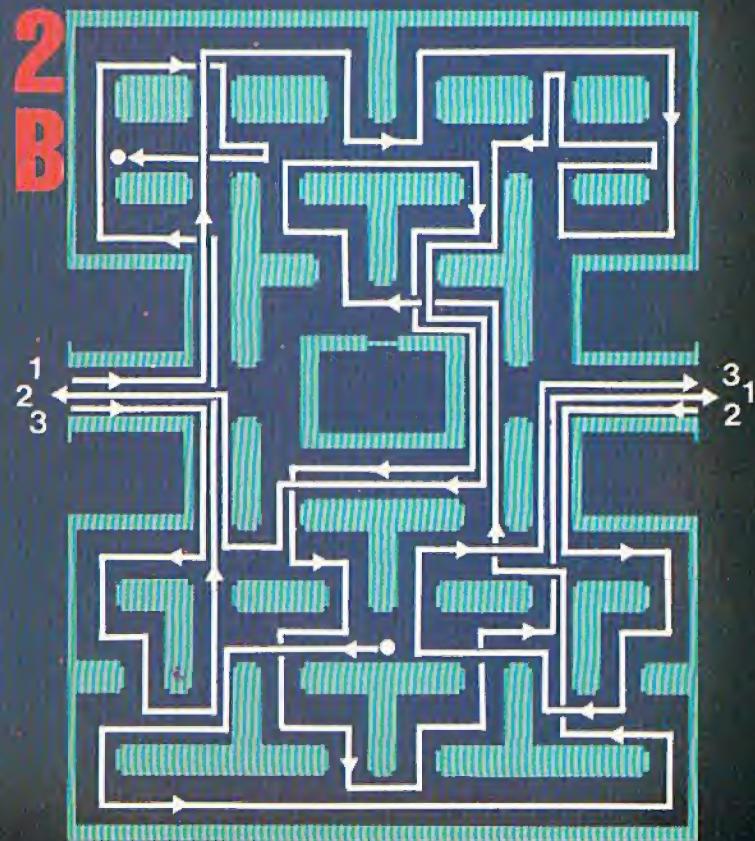
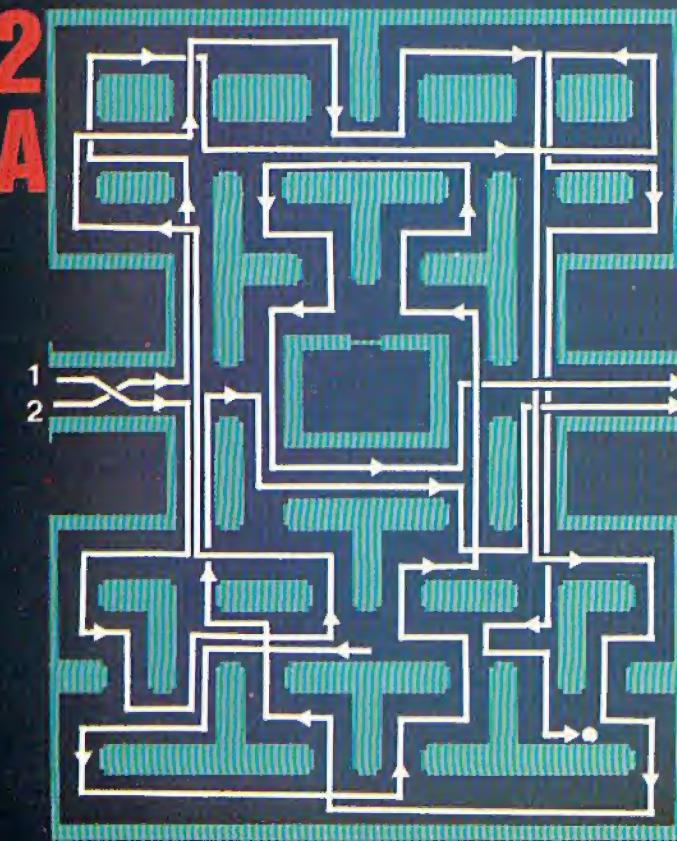
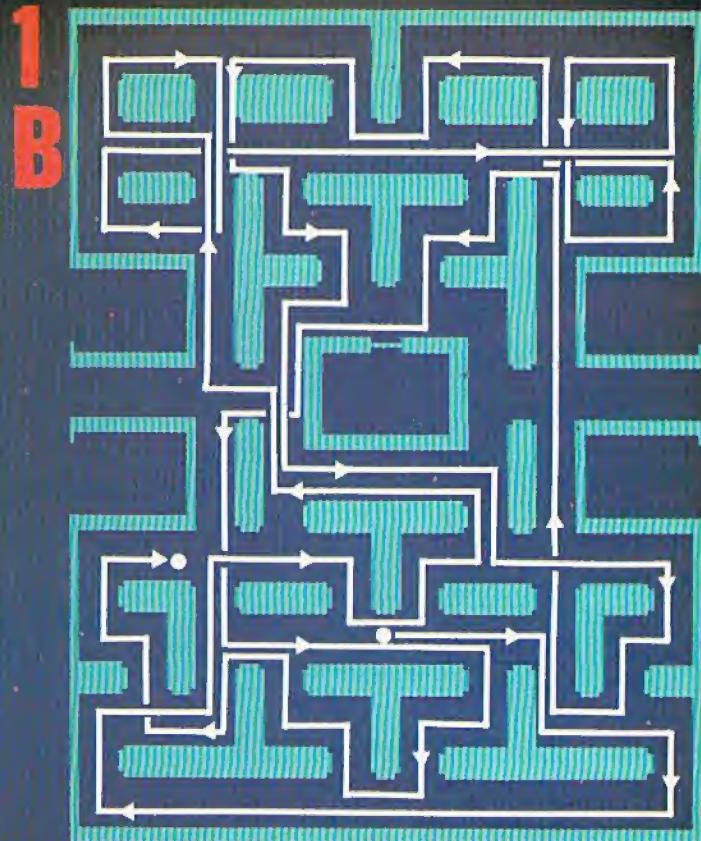
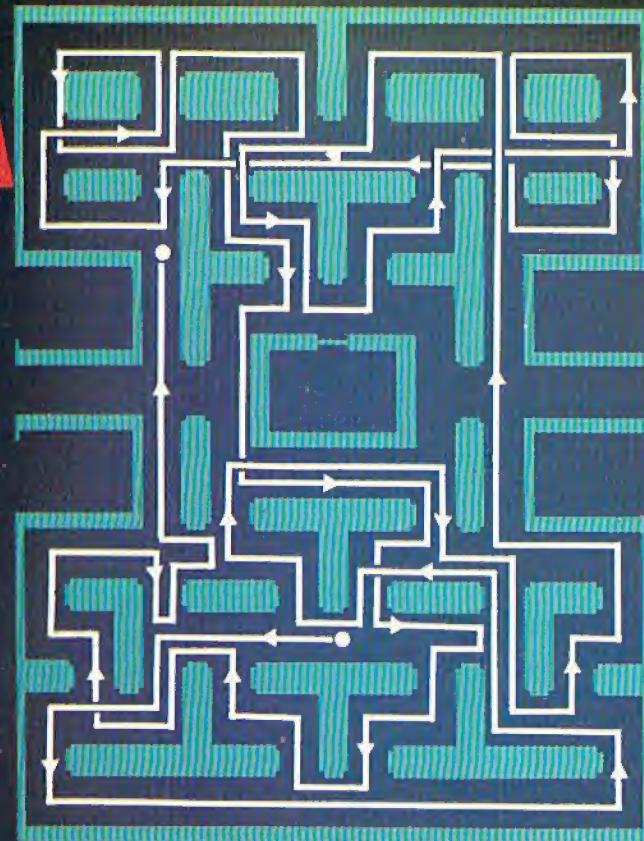
strategy had been used. However, those sno-bees that were in the process of turning a corner or hatching from eggs will not be frozen, but remain aggressive.

Advanced Diamond Block Strategy

The advanced diamond block strategy is by far the best strategy and should be used whenever possible. The main objective is to move the diamond blocks one space away from one of the walls. In this manner a 10,000 point bonus is earned, all of the non-corner-turning sno-bees are frozen, and a safe spot is set up for Pengo. Since the diamond blocks cannot be moved or crushed by the

sno-bees, and since they are only one space away from a wall, now Pengo can hide between the blocks and the wall. Therefore, all the sno-bees will have to come to the wall to get to Pengo. When they do this, simply freeze the wall and all of the sno-bees on the wall will become frozen and therefore vulnerable. It is impossible to be killed when this strategy is used correctly.

PAC-MAN: THE LAST WORD ON THE 9TH KEY



JoyStik was the first video game magazine to publish a Pac-Man 9th-key pattern, in the September '82 "Winning Edge." Now, we're going one step further. This collection of 9th-key patterns includes the first non-stop 9th-key patterns, the first patterns for the modified chip, the first pattern for passing through the monsters (twice!), and the fastest 9th-key pattern ever published.

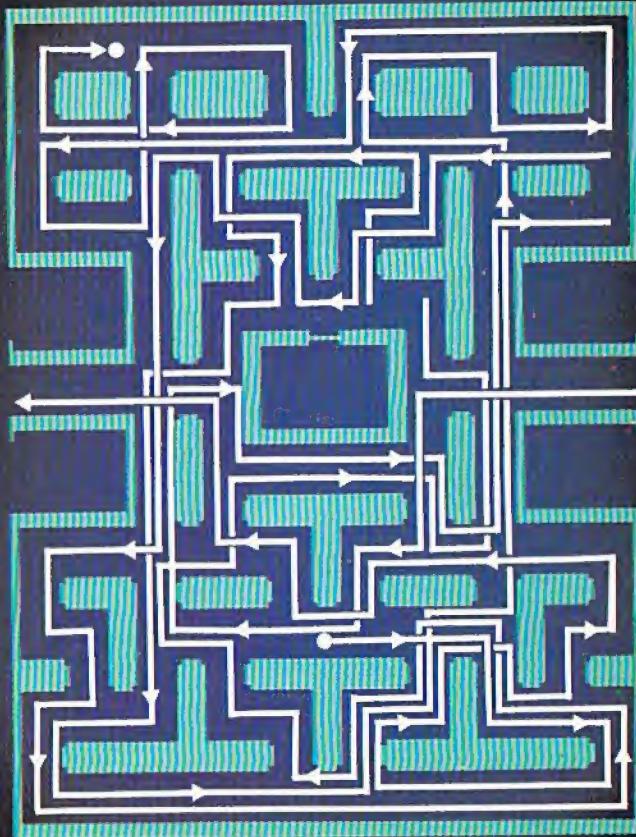
Patterns 1A and 2A work on the original Pac-Man game, while patterns 1B and 2B are for the modified machine. By "modified," we mean the original Pac-Man with the new chip that moves up the reverse times (commonly called the "Atlantic City" chip by New Jersey school children).

1A
This 45-second screamer was developed by Frank Woon and netted him \$1000 in a 1-hour time limit contest (highest game: 809,000). It requires flawless execution to work correctly—be particularly careful with the short reverses near the end.

1B
At 44 seconds, this is the fastest 9th-key pattern we've found. A marvel of efficiency, it was developed by Chi-Rong Sun, a student at the University of Washington.

2A
This pattern is reasonably quick (51 seconds), and very forgiving of bad turns and hesitations. It was developed by Steve Ford and Steve Pratt within the first few months after Pac-Man's release.

2B
Another pattern by Chi-Rong Sun. This one is 53 seconds long and will run correctly even if you get a little behind. Note how the monsters are kept in the tunnel near the end—this technique is used in many different 9th-key patterns.



The pattern shown above was developed by Tad Perry, and it is neither fast nor safe. So why did we include it? Because it's fun. Designed for the unmodified Pac-Man machine, this pattern is a great one to use when you're "just showing off."

Many of the maneuvers used in it are worthy of careful study—they are classic techniques that can be used in any pattern. The pattern intentionally forces many problem situations and solves each one of them, making it a showcase for good pattern-creating technique. If you can understand why it works—from beginning to end—then you really understand the game of Pac-Man.

Smooth turns are essential for this pattern to run correctly—the slightest hesitation will result in sure death at what should have been the next narrow escape. But the thrill of seeing the pattern properly executed is worth some extra work. Shortly after the start of the pattern, you'll pass right through the blue monster. Stay on course and on time, and you'll pass through the orange monster a few seconds later. After that comes a full minute of close calls and high-speed thrills that will leave you longing for a more relaxing game-like Defender.



THE HOME FRONT

by Jim Gorzelany



Attack of the Timelord N.A.P. Co. for Odyssey2

* * * *

Attack of the Timelord is Odyssey2's most engrossing action game to date. In this challenging combination of Space Invaders and Centipede, you control a bottom-screen "time machine" (known elsewhere as a "laser cannon"), firing upward at the villainous Timelord's projectile-dropping time ships. The ships travel in a serpentine string, winding up, down, and across the screen, resembling the movement of the title character in Centipede. In order to score points, you must destroy both the time ships and the missiles they drop. Complete one attack wave, and the Timelord counters with a new array of time ships. Each successive wave features a different combination of deadly missiles, some of which can track you down and even chase you across the bottom of the screen.

Attack of the Timelord is "voice enhanced." This means that if you own an Odyssey2 voice module, you'll hear the Timelord's verbal abuse before each attack wave. If you don't own a voice module, you can still enjoy the game on your Odyssey2 system—onscreen action will not be affected.

Though the game play in Attack of the Timelord is truly blistering, the graphics are typical Odyssey2: colorful characters on a plain black background. However, it's still an addictive game, with or without splashy graphics. With their most recent cartridges, such as Freedom Fighters and K.C.'s Krazy Chase, Odyssey2's manufacturers have proven that they can produce games that play as good as—or better than—anyone else's. Now if they can only get them to look as good as or better than anyone else's....



Pitfall Activision for Mattel Intelllevision

* * * *

Stampede Activision for Mattel Intelllevision

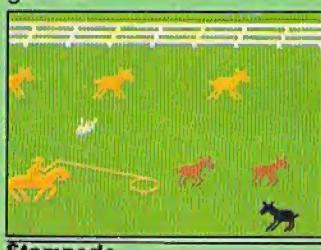
* * *

Since its inception, Activision has been known as an innovator in the field of home video games. Unfortunately, despite their reputation, Activision has obviously chosen to play it safe in the expanding Intellivision-compatible cartridge market. Their first Intellivision cartridges are merely recycled versions of their two most popular Atari 2600 games: Pitfall and Stampede.

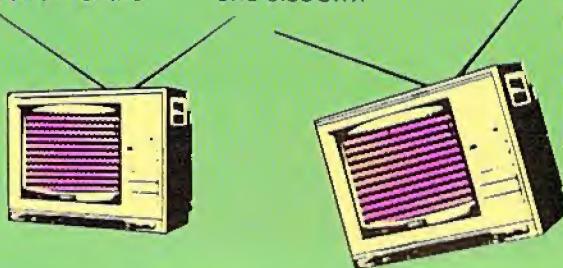
In Pitfall, you control an explorer named "Pitfall Harry" through 255 screens of obstacles. Harry must swing over bogs, jump across crocodiles' heads, avoid disappearing lakes, leap over dangerous scorpions, and avoid other hazards in search of the "Treasures of Enarc." Harry gets three lives and/or 20 minutes to find as many treasures as possible.

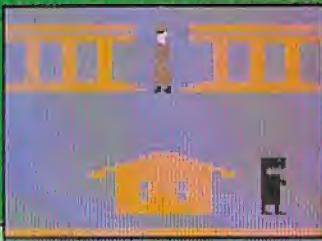
In Stampede, you control a horseback-riding cowboy out on the range. You score points by roping as many "dogies" of assorted colors and point values as you can before either running your horse into a skull or letting three cows get past you.

Both are entertaining, challenging video encounters. Unfortunately, Activision's crack design team hasn't improved on the basic game play or graphics of either cartridge. Both look and play almost exactly like their Atari 2600 counterparts. Given the expanded memory capabilities of the Intellivision system, Activision should have at least been able to improve the graphics of these two cartridges (as Imagic did with their Intellivision games). We hope Activision can better explore the potential of the Mattel system in future games.



Stampede



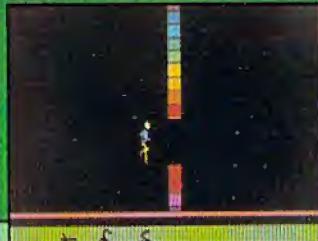


E.T. Atari for Atari 2600

**

To paraphrase a line from the movie, E.T. is nothing to phone home about. The object of the game, which borrows from the story line of its cinematic predecessor, is to find three pieces of a telephone and call the spaceship to take E.T. home. You control E.T. through six different game screens, eating "Reese's Pieces" along the way for energy and points. Should E.T. lose all of his energy, Elliott will show up to give E.T. a kiss and revive him up to three times per game (four times if E.T. finds a bouquet of flowers).

As you can probably tell, E.T. is a cute game—a very cute game. Its cartoon/quest scenario is like a scaled-down version of Atari's Superman cartridge. Unfortunately, Atari's graphics haven't seemed to improve much with age—they're still blocky and bland. Basically, the game play of the E.T. cartridge would seem to be geared toward the six-to-11-year-old crowd. Thus, if you're an older, or more serious video gamer, you should avoid this cartridge. Actually, in the next few months it will be *impossible* to avoid this game. In addition to its 2600 version, Atari is also planning E.T. games for the 5200 system, 400/800 computers, and arcades.



EarthWorld Atari for Atari 2600

**

EarthWorld is a quest/strategy game that is similar in theme to Atari's Raiders of the Lost Ark and Imagic's Riddle of the Sphinx. In this cartridge, you're on a quest to find the "warrior's sword" hidden somewhere in a maze of 12 zodiac-themed rooms. Also stashed in these rooms are 15 different objects, among them a lamp, dagger, leather armor, and talisman of passage. By selecting the right combination of objects and leaving them in the right rooms at the right time, you receive clues to help you find the sword. The onscreen clues refer back to more advanced clues found on particular pages and frames of a special DC comic book that is included with the cartridge.

Although EarthWorld is essentially a strategy game, the designers have thrown in a few action sequences to keep even the most casual players interested. The best of these are those in which you must avoid the spears of Sagittarius and cross the roaring waterfall in the jungle of Leo. Aside from these action episodes, however, EarthWorld isn't very exciting. The graphics are rather uninteresting and most of the game is spent running from room to room and figuring out what to do with the objects. EarthWorld is sure to appeal more to the analytically-minded than to the armchair home video cowboy.



Sky Jinks Activision for Atari VCS

Sky Jinks is an amusing, if not exactly absorbing, piece of video game fluff. In it, you pilot a P41 biplane through one of five pylon courses in as little time as possible. As you make your way through a course, you must fly slalom-style around a series of pylons. You must also avoid obstacles in your path, such as trees and drifting hot-air balloons. If you miss a pylon, you're penalized three seconds; if you crash into a tree, pylon, or balloonist, you'll have to take off again, losing more precious time.

If the game sounds familiar, it should—it's Activision's popular Skiing cartridge gone airborne. But Sky Jinks is a better game than Skiing. The graphics are more detailed, and the P41 is easier to control than Activision's skier was. The plane banks nicely through the turns, and casts a shadow in relation to its altitude. Younger players will get a real thrill maneuvering the biplane through the pylons, but more advanced video gamers may get a bit bored once they've memorized the courses.



Fast Food

Telesys for Atari 2600

Cosmic Creeps

Telesys for Atari 2600

**

Co Co Nuts

Telesys for Atari 2600

*

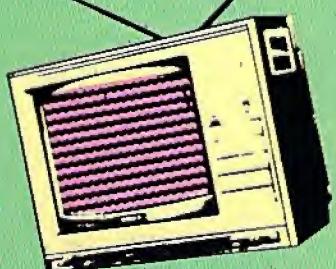
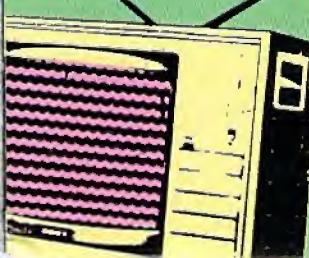
Telesys claims that it manufactures the "funniest games to hit the market." You might get a chuckle or two out of their three new games, but don't expect any high-grade belly laughs.

Of the three, Fast Food is clearly the best cartridge. In it, you control "Mr. Mouth," who must eat as many food objects flying at him as he can for calorie points. However, he must avoid the purple pickles—they give him indigestion. If he eats six purple pickles, he burps, the snack bar closes, and the game is over. Fast game play and good graphics add to the gastronomical fun.

On the other hand, Cosmic Creeps and Co Co Nuts are only mildly interesting. Cosmic Creeps has you avoiding "space skeeters" and "plasma pits," while blasting away at the cosmic creeps making their way to the top of the screen. In Co Co Nuts, you're "Stanley I. Presume," dodging coconuts being dropped by a tree-bound monkey. While these two games are cute, they'll probably hold your interest only for a short period of time.

Ratings:

- ***** terrific
- **** great
- *** good
- ** poor
- * yucch!



GAME SYSTEMS VS. COMPUTERS:

WHOSE SIDE ARE YOU ON?

by Danny Goodman

As you read this column, a major war is being fought out there in Home-Videoland. It's the fierce marketplace battle between the manufacturers of small, personal computers and the makers of home video game systems. The deployment of forces reminds me somewhat of the game Missile Command. Picture this if you will:

At the bottom of the screen are six comfortable video game fortresses—Atari 2600, Atari 5200, Intellivision, Odyssey2, Astrocade, and ColecoVision. Up until recently, they've enjoyed the distinction of being super powers in a world where people will gleefully pay \$125 to \$300 for the privilege of playing video games on a home color TV. They are, however, under attack by home computer enemies falling out of the sky—the Commodore VIC-20, Atari 400, and others. As the computers' prices fall in waves, they encroach ever further on the once happy video game territory.

To fend off these invaders, the video game fortresses fire off salvos of rebate promotions, improved cartridges, voice synthesizers, and even-lower prices. How long can Video Game Command hold out?

That's a hot question in the electronics industry today. Game makers claim that buyers of video games and computers are completely separate market groups, and will remain so at least for the next few years. The computer manufacturers, on the other hand, contend that consumers will want the practicality of owning a versatile computer which, at everyday discount prices under \$300, is comparably priced with so-called deluxe games.

Industry squabbles aside, as a home video gamer you're concerned only with the tough decision you're now forced to make—one that probably wouldn't have come up as few as six months ago. Namely, whether you should stick with a system that only

plays games, or buy one that functions as a computer as well. Allow me to offer a few guiding comments.

First, as much of a proponent of computers as I am—I write about them frequently and *with* one all the time—I strongly believe that it is a mistake to buy a computer solely to play video games. Even if you harbor the thought in the back of your mind that someday you'll expand into other computer applications, it's still not a wise move. What you're likely to discover later on is that you have chosen the wrong system for business, education, home financial management, or whatever. That's because you'll have based your original choice on game software, rather than practical software. If you're going to buy a computer, you should do so for practical, time-saving applications that will make your day easier, more productive, or more enriching (including self-learning computer programming if you're so inclined). If you have no such computer applications now, skip it.

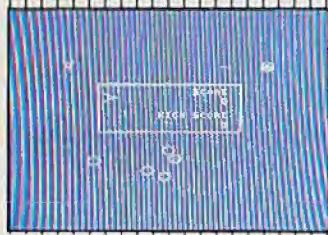
Next, fewer game cartridges are presently available for home computers, and they're generally more expensive than cartridges for home video games. While there are a great number of low-cost, third-party software games available for home computers, most of them appear as computer programs stored on magnetic floppy discs. In order to play them, you must first load the program into the computer's memory with a disc drive—a device that can cost about twice as much as the low-end computer itself.

I believe that, until 1985 or so, the diversity, originality, and challenging game play of home game cartridges will outpace those of games available for the low-price computers. Why? At least until then, there will be more game systems than computers in homes around the world. This will provide a large, tantalizing, and extremely competitive market for game software designers. Furthermore, the newer systems on the market—ColecoVision and Atari's 5200, specifically—offer spectacular graphics that rival anything produced by even the best low-priced computers.





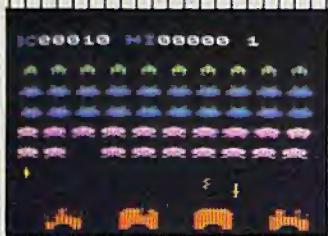
Commodore VIC-20 System



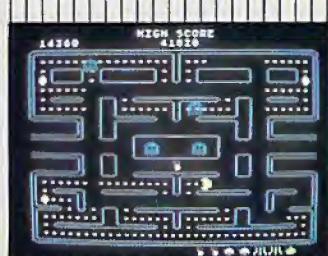
Omega Race



Gorf



VIC Avenger



Pac-Man



Missile Command



Centipede



Atari 5200 System

From a more practical standpoint, a video game is usually connected to a TV in an entertainment area like the family or living room, readily accessible for play with friends or others in the family. That's the last place for a computer to be hooked up for non-game computing! And if you think a game console, controllers, cables and a dozen cartridges clutter up the coffee table, wait until you try it with a computer, cassette player, disc drive, interfaces, controllers, manuals, cartridges, cassettes and discs.

Picking a video game over a computer is much like choosing a specialist instead of a general practitioner to cure your hunger for video games. The specialist has everything

you could possibly need for that specific interest area, while the G.P. may have to make compromises to be all things to all people. Face it—game systems are designed specifically to play games, not to figure your taxes, handle your investments, and so on. The game units are simpler to use and many are expandable. Adapters that allow you to play cartridges designed for other systems and voice synthesizers are now becoming available which enhance game play even further.

When it comes to playing games, nobody does it better than the game systems themselves.



COMPUTER '83

NETWORKING GAMERS CREATE AN EMPIRE

by David and Sandy Small



Illustration by Gary Gianni



THE END WAS VERY NEAR.

Hopkins and I swung in low Earth orbit, just barely skimming the top of the atmosphere. Our two Federation star cruisers were being refueled and repaired while we temporarily took a break from our long battles with the Romulan Empire.

Many of my good friends in the Empire had been lost that night. Mycroft had been tricked near Janus by an Orion ship that torpedoed him during a bombing raid when he had his shields down. Captain Tor had been badly damaged near Rigel Beta, and the merciless Wei had hunted him down and destroyed him. And even Caven, known for his speed at hyperjumping, had gotten himself trapped by four Romulans while defending Kazar. He and his ship were reduced to white-hot radioactive debris. All that were left were Hopkins and me, Commander Cain. Hopkins was a wily old warrior; together we had led the Federation team for over two years.

Refueling and repairs now complete, I brought my shields up to 100% power, for it had been quiet for too long. The Romulans wanted Earth, and they wanted me—I had destroyed 22 of their group. They knew where to find me; I was orbiting Earth, defending it. What was taking so long?

I ran another scan; a chill ran up the length of my spine. Five Romulan cruisers. I ran further scans—very bad news. In the lead was the dreaded Waitz. On his flank was Roepke, who was as good or better than I. And there was Galcher! I thought I had destroyed him over Venar! I didn't recognize the others, but I knew all of them were loaded with occupation troops headed for Earth. With five Rom ships, they could wipe out both Hopkins and me easily.

Hopkins scanned the oncoming Romulans. I saw his ship "freeze," and he was in hyperspace. For the moment, he was nowhere, but I knew he would soon appear very close to the Romulan formation. I also knew he was doomed.

I had a sudden, devious idea. Just maybe it could work. I quickly threw on the cloaking device and locked into a hyperjump to the exact center of the Romulan formation. While jumping, I watched my scanner. Chris popped out of hyperspace. The Romulans, being the professionals that they were, had seen him jumping and had prepared a landing place for him—floating groups of photon torpedoes

that went off with a blinding flash! Though I knew Chris had to be badly hurt, his ship was still there. He fired off photon torpedoes at the nearest Romulan, Roepke, and I saw them go off; Roepke, I knew, had to have been badly hurt also. I saw more torpedoes heading for Chris. Another white, hot flash, and my scanner slowly cleared.

Lots of floating debris. As I watched, Roepke's ship exploded; Hopkins had gotten him! But my friend Chris was gone, too. And now only I was left. But as he had gone out, Chris had known something that the Romulans had not known. Commander Cain was right behind him, cloaked, in hyperspace. Were they in for a surprise!

I materialized right into the exact center of the Romulan group, at point-blank range and within a few hundred feet of the nearest ship. I uncloaked, and suddenly four Romulan commanders were staring, in shock, at a Federation ship right in their midst. I diverted all remaining power to my weapons, and fired every torpedo on board at the four great hulking Rom ships around me. And fired, and fired, and fired. The scanner to the outside just showed pure sun-like white.

When I eventually stopped firing and ran a scan, the most amazing sight greeted me. Where four Romulan starships had been were four perfectly circular white hot suns. A few Romulan

torpedoes had gotten close to me, and I was a bit damaged, but there were no Romulans left. We had won!

I let out a whoop that echoed through the vacant halls of the Colorado State University Engineering building—it was, after all, 1:50 A.M. A message flashed across my screen: "PLATO DOWN IN FIVE MINUTES." The computer I was playing on was about to shut down, and with it, the game. It would resume when the computer came back up at 7 A.M. By then, other Federation forces would be ready, and they would push the Romulans back.

I'd say I ran up a good 2000 hours playing Empire during college. CSU's PLATO terminal was connected, by phone, to a PLATO computer in Minnesota. There were hundreds of other PLATO terminals all over the country, many with dedicated Empire-playing users. There was Linda in Alaska, Mycroft and Capt. Tor in Dallas, Caven in Houston, Roepke, Waitz, and Hopkins in Minnesota, and Galcher in Sunnyvale. We were all tied into the central computer, battling it out on our terminals in the game Empire, where up to 32 people can be—and frequently are—playing at the same time.

Empire was originally developed around 1974 by Chuck Miller and Gary Fritz, and can be played by anyone with access to a Control Data PLATO terminal. You can find PLATO terminals in the many Control Data Learn-

ing Centers across the country, or in universities that have PLATO systems for college courses.

The word of Empire is around. And the new computer networks are just beginning to trod on the path broken by PLATO. Societies are beginning to develop on networks such as the Source and Compuserve, as well as the many independent computer "bulletin boards" around the country.

Also, Compuserve users can play a game similar to Empire, called Megawars. In it, up to eight users at a time from anywhere in the country can fight over the future of the galaxy. Megawars does not require the costly PLATO terminal, and you, the reader, can get involved with this (somewhat scaled down) version of Empire for the cost of a home computer and phone modem.

Soon I anticipate a graphics-oriented, Empire-like game, developed for systems like the Source and Compuserve. There should also be versions available soon for the Apple, Atari, IBM, and Commodore machines. They should arrive within a year, and if the popularity of Empire is any indication, will be an enormous success.

I hope so. Since I left school—and my PLATO terminal—I miss the feeling of the hyperdrive going into action, the flash as the torpedoes explode, and all my friends and foes in Empire.

THE SWORD OF RAM

by HILARY BARTA

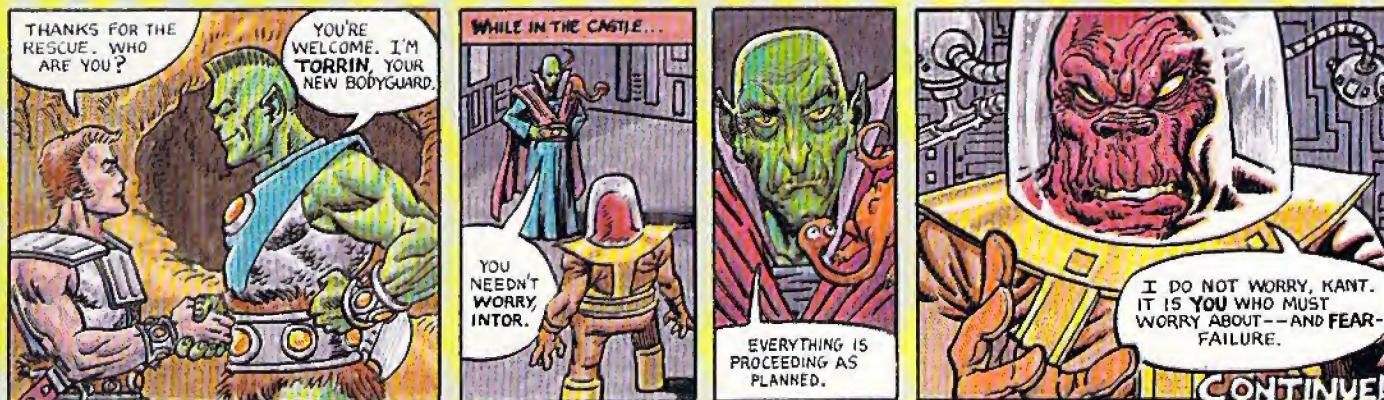
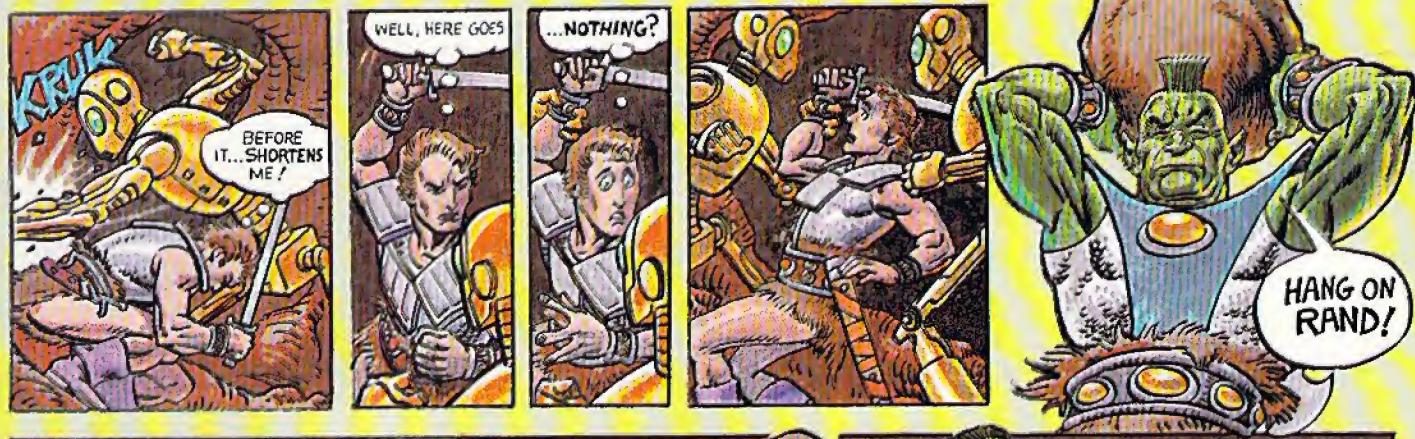
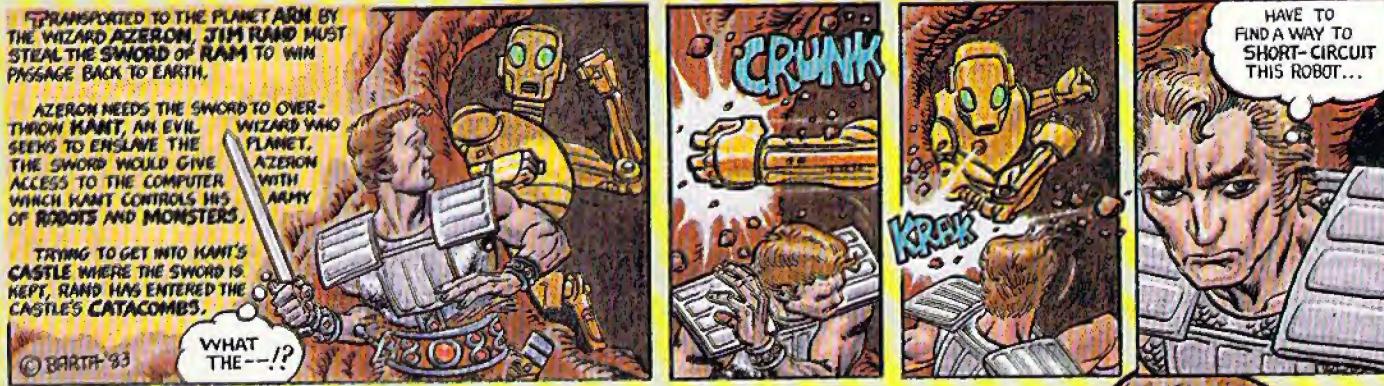
TRANSPORTED TO THE PLANET ARON BY THE WIZARD AZERON, JIM RAND MUST STEAL THE SWORD OF RAM TO WIN PASSAGE BACK TO EARTH.

AZERON NEEDS THE SWORD TO OVER-THROW KANT, AN EVIL WIZARD WHO SEEKS TO ENSLAVE THE PLANET. AZERON WITH ARMY OF ROBOTS AND MONSTERS.

TRYING TO GET INTO KANT'S CASTLE WHERE THE SWORD IS KEPT, RAND HAS ENTERED THE CASTLE'S CATACOMBS.

© BARTA '83

WHAT THE--!?



by Jim Gorzelany

WHEN VIDEO GAMES ARE OUTLAWED,

WARNING: THE SURGEON GENERAL HAS DETERMINED THAT PLAYING VIDEO GAMES MAY BE HAZARDOUS TO YOUR HEALTH. No, manufacturers are not being required to plaster the above message across the fronts of video game machines... yet.

The last time this country was caught up in the midst of a temperance movement, gas lamps lit Main Street and women were still waiting to get the vote. Groups like the "Anti-Saloon League" and crusaders like Carry Nation and Billy Sunday took to the streets to spread the word against the evils of John Barleycorn and Demon Rum.

Today, the same "temperance mentality" is beginning to stir in the cities and towns of this country once again. Only this time, rather than marching against the perils of strong drink, 1983's

prohibitionists are taking aim at the "destructive nature" of video games and arcades. Up until recently, such movements were generally grass roots affairs with only local involvement. However, a national figure has recently taken up the cause against video games—the immortal C. Everett Koop, Surgeon General of the United States. Koop ("C" to his friends) recently cautioned parents that the youth of America is becoming addicted to video games "body and soul." He further warned of the "abberations of childhood behavior" brought on by playing games, including, "tensions, sleeplessness in kids, and (bad) dreams."

The Surgeon General of the United States has officially gone public against video games. Can a full-blown government "awareness campaign" to support this attitude be far behind?

The first step in such a crusade would be the creation of anti-video game pamphlets. These would be distributed by dedicated government workers in schools and churches, and out on street corners next to the Moonies and Hare Krishnas. Possible titles might include "Video Games and Drug Abuse: Micro-chips off the Same Block," and, "Ten Ways to Keep Your Kids Out of the Arcades" (number one suggestion: beat them). They would graphically warn against the many popular terrors of video game addiction, such as:

 Video game players squander all of their spare money on video games. (*Wrong—they also squander it on magazines like this one.*)



ONLY OUTLAWS WILL PLAY GAMES

 Hanging out in arcades can lead to drug usage. (Wrong—if video game players squander all of their spare money on video games, how can they afford to buy drugs?)

 Playing video games stunts a person's growth, makes his or her hair fall out, and saps the player of strength. (Wrong—the champion player at our local arcade is as strong as

ten men! It's really something to see this bald midget toss ten guys around the room, too!)

The next step in Washington's anti-games crusade would be an official government training film to be shown to Boy Scouts and armed forces recruits across the country. Now, Washington, D.C., may not exactly be Hollywood, California, but you've got to give some kind of credit to any film producer who creates gems such as "The Soybean and You," "Building A Solar Dog House," and "Your Social Disease: Fact or Fiction?" Look for the government's cinematic anti-games production to carry a snappy title like "Video Game Nightmare Madness." The plot might read something like this:

Joe (Stymie Beard) is a high school sophomore living in Everytown, U.S.A. As the

film opens, two of his "shadier" classmates (Leo Gorcey and Huntz Hall) are teasing Joe because he never goes to the local arcade after school like everyone else. Tired of their constant abuse, Joe decides to skip choir practice one day and see for himself what goes on inside "Dyno Dave's Atomic Arcade." Soon Joe is caught up in the video game madness of broken dreams and misspent coins. Thanks to Dyno Dave (Arte Johnson), Joe soon becomes a drug addict, a wino, a liar, and a cheat. He even sells his mother's cat to a medical research firm for a handful of quarters. Joe winds up in the gutter, washed up before his 17th birthday. Finally, his life is saved by the Reverend Jerry Falwell (in a rare cameo appearance), and Joe is brought back to the straight and narrow video game-free path of righteousness.

Of course, after the government training film is produced, can a TV public service commercial be far behind?

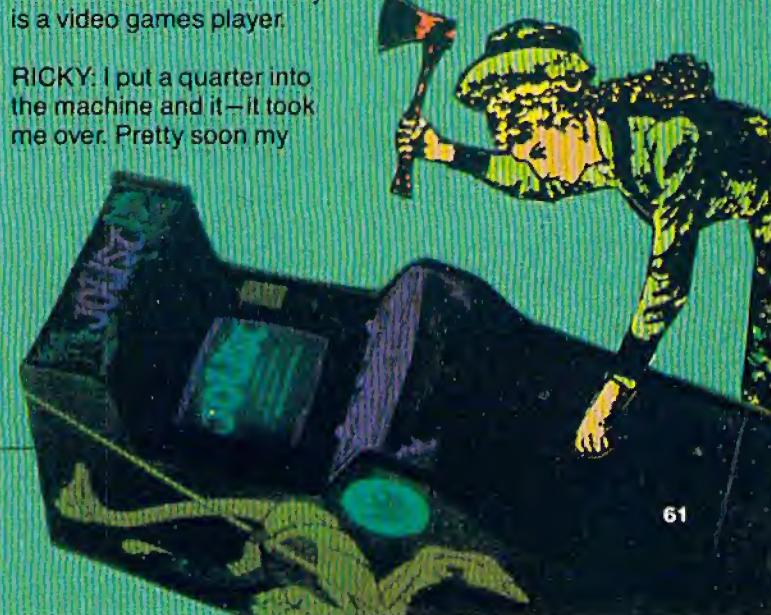
ANNOUNCER: This is Ricky. He may look normal, but he's not. You see, Ricky is a video games player.

RICKY: I put a quarter into the machine and it—it took me over. Pretty soon my

heart began to beat real fast, then faster and faster. I kept playing game after game—I had to. I was afraid that if I stopped, my heart would, too, and I'd be dead! I'd drop right there on the floor of the arcade and nobody would care! They'd just walk all over me trying to get to the machines, and....

ANNOUNCER: Please help Ricky and many other unfortunate children like him learn about the dangers of playing video games. Write to the Surgeon General's *Save the Players Campaign*, Washington, D.C. A quarter is a terrible thing to waste.

Feeling paranoid? Don't worry. As with other great political and ideological confrontations, the issue at hand has two sides to it. Concerned game players are sure to form "right-to-play" groups and video game lobbies—political action committees (join the Pac-Man PAC, man)—to take on the anti-game forces. Until then, remember—when video games are outlawed, only outlaws will play video games. See you in jail!



TECHNOLOGY

LASER DISC/VIDEO

Sega Electronics recently introduced their latest example of software technology—a laser disc image interfaced with a computer video game. The end product—code-named Astron Belt—is a high-tech space movie that the player actually controls.

The film that appears on the screen (a Japanese Star Wars look-alike) consists mainly of alien fighter ships buzzing around an unearthly planet. Each scene of the movie is recorded many times, and from many angles, on a single laser disc. Superimposed on the same screen is your ship—a computer generated image that you maneuver with a simple joystick.



Sega's Astron Belt

According to Bob Rosenbaum, Vice President of Marketing for Sega, each time you move your ship, it signals the laser disc to shift to the appropriate movie scene. For instance, when you fire at one of the filmed enemy ships it appears to explode in a ball of fire and debris. But what *actually* happens is that the laser moves to the area of the disc that depicts that particular explosion. You don't notice the shift because the laser disc can execute these maneuvers faster than your eye can register.

The trick is to have every possible scene recorded on the disc.

Although Astron Belt is still only experimental, Rosenbaum said, "We've been working on this for over a year and hope for a mid-1983 introduction. This is the game of the future—the total game experience."

ORAL VIDEO

Tommy Garcia of Colton, California scores over 20,000 points on the home version of Pac-Man—using only his mouth to control the game. Tommy, a quadriplegic, is able to accomplish this video feat by using a mouth-operated controller designed for the Atari VCS by KY Enterprises of Long Beach, California.



Mouth controller and multi-game unit

According to Ken Yankelevitz, President of KY Enterprises, the controller has a flat "lollipop" joystick that fits in the player's mouth and is moved with the head. The fire button is replaced with a "puff switch" that the player activates by puffing into a small tube. And the select/reset buttons are tiny micro-switches controlled by the tongue or lips (\$65).

Another of Yankelevitz's inventions was designed for Olympic volleyball player, Kirk Kilgore, who was left

paralyzed after a training session accident. By redesigning the Atari system's cabinet to include a small television and all the necessary controls, Yankelevitz developed a portable, self-contained video game unit.

"We designed it for a hospital environment," Yankelevitz said. But the 20-pound unit—which sells for \$400—solves at least one problem common to all home gamers by eliminating the need for long wires that run from the television to the system to the player.

The system is also available with a multi-game board that allows the player to change games with the push of a button (\$150). We wanted to eliminate the need to handle a cartridge every time you want to play another game," said Yankelevitz.

As for future inventions, Yankelevitz said, "We're working with computers and voice control now. We hope to design a system that will perform—on voice command—household chores like opening doors and adjusting the heat."

UNSETTLING SETTINGS

It's no secret that arcade owners can do a lot to change the way you play. Listed below are operator-accessible settings for some of your favorite arcade games.

D. Gottlieb's newest game, Q*bert, has two levels of difficulty: "normal" and "hard." The machine can be set to give you three, four, or five

lives per game. Your first bonus life can be obtained at anywhere from 6,000 to 11,000 points (in increments of 1,000). And subsequent bonus lives can be awarded every 12,000 to 17,000 points (also in increments of 1,000).



Atari's Pole Position

Atari's Pole Position also offers optional difficulty settings. The difficulty level for the qualifying lap can be set at one through eight; the race laps also have eight settings. The time needed to qualify is adjustable from 90 to 120 game seconds. And the maximum game time can be either three or four race laps.

Rescue, by Stern URL, is far less complex. The machine can be set for either three or five lives. And there are only two levels of game difficulty.



Williams' Joust

Joust, by Williams Electronics, has game difficulty settings ranging from zero to nine. The bonus level can be set in increments of 1,000—up to 99,000. And the number of lives you have can vary from one to 99.

JOYSTIK CHARTS

WOMEN PLAYERS

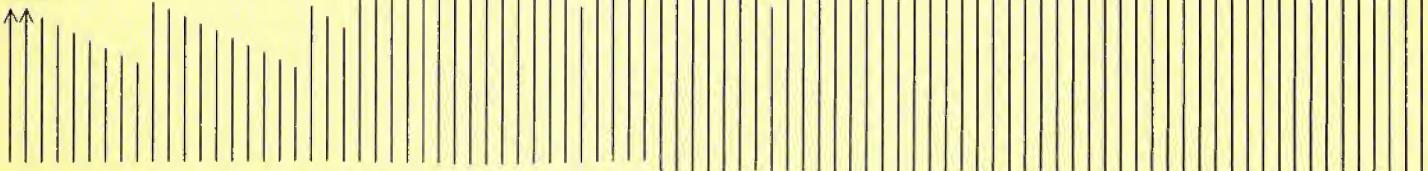
To prove that women arcade players aren't just interested in "cutesy" games, we asked two of the hottest women players around what their favorite arcade games were, and why. Just as we expected, women are as serious about video gaming as men. In fact, the women listed below are among the best players we've seen—period.

KAREN NG

Originally from Hong Kong, Karen has been in the U.S. for 14 years and has been playing video games for only two years. She is currently a sophomore at the University of Washington and plans to enter the field of social work. Karen makes a habit of rolling over every game she plays until she gets tired of playing.

1. Defender

High Score: Over 1,000,000
"I like shooting all the different things on the screen. It's an exciting game to turn over. And I like to catch all the humanoids—that's the best part."



Once again, we present the JoyStik list of top arcade players and their scores, as compiled by Walter Day of the Twin Galaxies International Scoreboard. Submit new records to Walter at: 226 E. Main Street, Ottumwa, IA 52501. Please include a signed verification of your score(s) from the owner or manager of the arcade in which the score was achieved.

Game	Player	High Score	Date	Arcade Location
Baby Pac-Man	Leo Daniels	389,900	12/8	Lights Years Amusement: Wrightsville Beach, NC
Burger Time	Franz Lanzinger	1,081,900	11/1	Golfland USA: Sunnyvale, CA
Centipede	Darren Olson	15,207,353	10/15	Reflexions: Calgary, Alberta
Defender	Ned Troide	62,999,975	10/16	Video Captain: Clearwater, FL
Dig Dug	Antonio Medina	3,357,000	8/1	Cosmic Palace: Napa, CA
Galaga	Eric Bolduc	10,916,000	12/1	Pumona, CA
Gorf	Todd Rogers	653,990	11/24	Haunted Trails: Burbank, IL
Jungle King	Dan Cook	943,430	11/9	Golden Dome: Woodbridge, VA
Millipede	Eric Ginner	739,036	12/14	Golfland USA: Sunnyvale, CA
Moon Patrol	Eric Ginner	740,070	11/25	Golfland USA: Sunnyvale, CA
Ms. Pac-Man	Michael Lepkosky	286,410	9/18	Family Fun & Games: Houston, TX
Omega Race	Craig Nichols	2,638,800	6/6	Arcade Alley: Glendora, CA
Pac-Man	Doug Nelson	9,980,420	11/12	Fun Factory: Bakersfield, CA
Pengo	Mark Robichek	263,860	10/24	Central Park Amusement: Mountainview, CA
Qix	Desiree McCrorey	1,046,412	11/28	Golfland USA: Sunnyvale, CA
Reactor	Linda Rojas	321,299	10/30	Pot of Gold: Kenosha, WI
Robotron	Leo Daniels	169,595,255	9/21	Light Years Amusement: Wrightsville Beach, NC
Satan's Hollow	Darren Olson	908,885	12/7	Reflexions: Calgary, Alberta
Stargate	Oscar Iglesias	70,283,000	11/24	Mr. Video: Concord, CA
Tron	Sterling Ouchi	3,195,329	8/30	Phil's: Lakewood, CA
Tutankham	Mark Robichek	244,920	12/7	Golfland USA: Sunnyvale, CA
Zaxxon	Eric Burch	2,138,650	11/13	Sweden House: North Palm Beach, FL

NEXT...

JoyStik reviews the video game contests: Big & Small, Good & Bad

For a full (and colorful) report of our findings,
pick up the next JoyStik issue, OR →





Score

- ★ winning advice from high scorers
- ★ tested and verified strategies for favorite games
- ★ expert tips for hot new games
- ★ exclusive interviews with top game personalities

**Score big. Subscribe to JOYSTIK™:
HOW TO WIN AT VIDEO GAMES.
Get 6 big issues—just \$17.70.**

BONUS: Act today. We'll send you a free copy
of the JoyStik Special Edition:
HOW TO WIN AT HOME VIDEO GAMES.

JOYSTIK™
3841 W. Oakton Street
Skokie, IL 60076

Name (please print) _____

Address _____ Apt. No. _____

City _____ State _____ Zip _____

If you care to charge your order, please enter the appropriate information below:

Master Charge Acct. # _____

Expiration Date _____

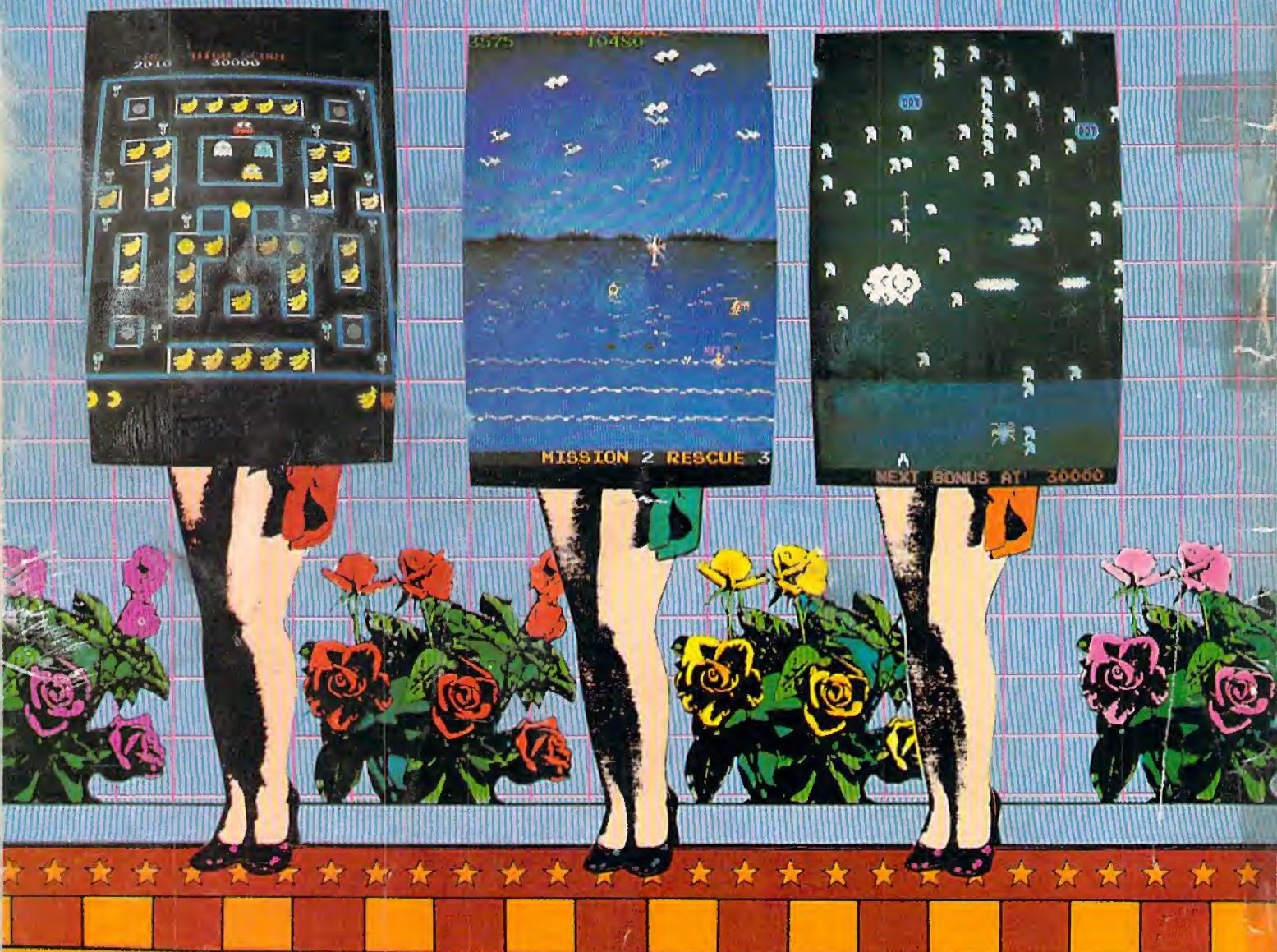
VISA Acct. # _____

Expiration Date _____

J-5

Sorry, subscription available only in the
United States

ANOTHER JOYSTIK TOUR DE FORCE, FEATURING:
Game Systems vs. Computers
Fast and Safe 9th-key Pac-Man Patterns
West Coast Game Manufacturers
Computer Network Games
"Silver Sue" and Her Arcade
The Arcades of Seattle
and a new column: The Home Front



STAR RAIDERS STRATEGY

